

Table 3-12
Buildings with Known Asbestos
MCAS El Toro BCP - March 1995

Database Tracking	Building Number	Description	Year Built	Parcel	Asbestos Determination	
					Not Identified	Confirmed Type
BLD 1650	1650	Aviation Armament	1947	3A	X	
BLD 1655	1655	Squadron Headquarters	1947	3A	X	
BLD 1656	1656	Admin. Storage	1947	3A	X	
BLD 1703	1703	Hazardous/Flammable Storehouse	1952	4B		NF
BLD 1710	1710	Public Works Maint. Storage	1946	4A	X	
BLD 1719	1719	Applied Instruction Building	1946	3A	X	
BLD 1720	1720	NBC Headquarters	1946	3A	X	
BLD 1721	1721	Bachelor Enlisted Quarters	1946	3A		NF
BLD 1752	1752	Magazine Equip. Shed	1956	5C	X	
BLD 1787	1787	Aviation Armament	1958	3A	X	
BLD 1791	1791	Aviation Armament	1946	3A	X	
BLD 1804	1804	Lunchroom	1966	2A		NF
BLD 1815	1815	Line Maint. Shelter	1979	5A	X	

Note:

ACM = Asbestos Containing Material

NA= Not Applicable

NL= Not Located on Station Maps

F= Friable Asbestos

NF= Non-Friable Asbestos

(1) Scheduled to be demolished per MCAS El Toro Building List dated 20 August 1993.

(2) Location not known.

Sources:

A - IT Corporation, 1989. MCAS El Toro Asbestos Survey and Assessment.

B - Ecology and Environment, Inc., 1991. MCAS Camp Pendleton, El Toro and Tustin, Asbestos Survey and Assessment.

C - Ecology and Environment, Inc., 1991. MCAS Camp Pendleton, El Toro and Tustin, Asbestos Survey and Assessment.

Table 3-13
Summary of SWMUs/AOCs
MCAS El Toro BCP - March 1995

Database Tracking	SWMU/AOC Number (1)	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	BCP Area Type
RFA 1	1	NFA	Former Scrap Metal Yard	Near Golf course		Source: NEESA photograph	3F	1
RFA 2	2	NFA	Vegetation Piles	Near Golf Course		Source: NEESA photograph	3F	1
IRP 25	3	NFA	Marshburn Channel	Adjacent to NW boundary	X	To be addressed in IRP Site 25	1G	6
IRP 25	4	NFA	Bee Canyon Wash	Traverses Station in an EW direction	X	To be addressed in IRP Site 25	5A	6
IRP 25	5	NFA	Borrego Canyon Wash	Adjacent to SE boundary	X	To be addressed in IRP Site 25	5A	6
RFA 6	6	NFA	Landfarming site	NW of Bee Canyon Wash	X	RFA recommended NFA	5A	3
RFA 7	7	NFA	Transformer storage area	East of Bee Canyon Wash	X	Additional investigation recommended by DTSC; sampling scheduled for 1995	4B	7
RFA 8	8	NFA	Abandoned Well 50-3285	West of Bldg 809	X	RFA recommended NFA	2F	2
RFA 9	9	NFA	Fuel bladder	East of Agua Chinon Wash	X	Additional investigation recommended by DTSC; sampling scheduled for 1995	5A	7
IRP 3	10	FA in IRP (2)	Abandoned Well 24-4274	East of Bldg 385		To be addressed in IRP Site 3 (2)	2A (7)	6
IRP 25	11	NFA	Agua Chinon Wash	Traverses Station in an EW direction	X	To be addressed in IRP Site 25	5A	6
RFA 12	12	NFA	Active Sanitary Sewer Lines	Station-wide		Sanitary wastes	NA	1
RFA 13	13	NFA	Drop Tank Storage Area	SW of Bldgs 114 & 115	X	RFA recommended NFA	2A	3
RFA 14	14	FA	Drop Tank Fuel Storage Area	NW of Bldg 605	X	RFA recommended repair of cracks in pavement	5A	6
RFA 15	15	NFA	Wash Water Runoff Site	SW of fueling station 576	X	RFA recommended NFA	5A	3
RFA 16	16	NFA	Wash Water Runoff Site	NW of fueling station 574	X	RFA recommended NFA	5A	3
UST T5	17	NFA	Underground Storage Tank	Tank Farm 2		Spill Containment Tank	1A	7
UST T2	18	NFA	Underground Storage Tank	Tank Farm 4		Spill Containment Tank	5A	7
UST T3	19	NFA	Underground Storage Tank	Tank Farm 4		Spill Containment Tank	2A	7
UST 414C	20	NFA	Underground Storage Tank	414	X	RFA recommended NFA	5A	7
UST T6	21	NFA	Underground Storage Tank	Tank Farm 5		Spill Containment Tank	2A	7
UST T8	22	NFA	Underground Storage Tank	Tank Farm 5, 6		Spill Containment Tank	2A	7
UST T1	23	NFA	Underground Storage Tank	Tank Farm 555		Spill Containment Tank	2D	7

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Database Tracking	SWMU/AOC Number (1)	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	BCP Area Type
UST T7	24	NFA	Underground Storage Tank	Tank Farm 6		Spill Containment Tank	5A	7
SAA 5A	25	NFA	< 90-Day Accumulation Area	5		Located on Tarmac	5A	2
SAA 5B	26	FA	< 90-Day Accumulation Area	5	X	Excavate shallow stained soil	1A	6
SAA 10	27	NFA	< 90-Day Accumulation Area	10	X	RFA recommended NFA	1A	2
RFA 28	28	NFA	Fuel Spill Site	AERO CLUB 10		Past routine fuel spills; No evidence of release (3)	5A (7)	2
SAA 29A	30	NFA	< 90-Day Accumulation Area	29	X	RFA recommended NFA	1D	3
SAA 29B	31	FA in IRP (5)	< 90-Day Accumulation Area	29		Located in IRP Site 15 (5)	1D	7
	32	NFA	Drum Storage Area	36		Source: 1989 RWQCB letter (3)	1D (7)	NA
SAA 51	33	FA	< 90-Day Accumulation Area	51	X	RFA recommended excavation of shallow, stained soil	1D	6
	35	NFA	< 90-Day Accumulation Area	96		Source: SPCC map (no date) (3)	4A (7)	NA
SAA 114	38	NFA	< 90-Day Accumulation Area	114		No materials present; No surface defects	5A	2
SAA 115	39	FA	< 90-Day Accumulation Area	115	X	Unknown levels of SVOCs in shallow soil; RFA and DTSC recommended additional investigation; sampling scheduled for 1995	5A	7
	40	NFA	Drum Storage Area	127		Source: 1989 RWQCB letter (3)	2A (7)	NA
RFA 41	41	NFA	Vehicle Wash Rack	127	X	RFA recommended NFA	2A	3
SAA 130C	42	NFA	< 90-Day Accumulation Area	130		Surface free of defects	2A	2
	43	NFA	Drum Storage Area	137		Source: DHS photograph (3)	2A (7)	NA
	44	NFA	Drum Storage Area	143		Source: 1989 RWQCB letter (3)	2A (7)	NA
SAA 155C	45	NFA	< 90-Day Accumulation Area	155	X	RFA recommended NFA	5A	3
RFA 46	46	FA	Equipment Storage Yard	163	X	Elevated levels of petroleum hydrocarbons; RFA and DTSC recommended additional investigation; sampling scheduled for 1995	3A	6
	47	NFA	< 90-Day Accumulation Area	172		Location not known (3)	3F (7)	NA
UST 178	48	NFA	Underground Storage Tank	178	X	RFA recommended NFA	1A	7
UST 179	49	NFA	Underground Storage Tank	179	X	RFA recommended NFA	1A	7

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Database Tracking	SWMU/AOC Number (1)	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	BCP Area Type
	50	NFA	Drum Storage Area	179		Source: DHS photograph (3)	1A (7)	NA
UST 180	51	NFA	Underground Storage Tank	180		No sampling based on 1990 tank test	1A	7
UST 182	52	NFA	Underground Storage Tank	182		No sampling based on 1990 tank test	1A	7
	55	NFA	Drum Storage Area	186		Source: DHS photograph (3)	1D (7)	NA
	56	NFA	Drum Storage Area	187		Source: DHS photograph (3)	1D (7)	NA
UST 189	57	NFA	Underground Storage Tank	189	X	RFA recommended NFA	1A	7
UST T4	58	NFA	Underground Storage Tank	189		Spill Containment Tank	1A	7
UST 191	59	NFA	Underground Storage Tank	191	X	RFA recommended NFA	1A	7
UST 204	60	NFA	Underground Storage Tank	204		No sampling based on 1990 tank test	5A	7
UST 205	61	NFA	Underground Storage Tank	205		No sampling based on 1990 tank test	5A	7
UST 206	62	NFA	Underground Storage Tank	206		No sampling based on 1990 tank test	5A	7
UST 207	63	NFA	Underground Storage Tank	207		No sampling based on 1990 tank test	5A	7
SAA 240	64	NFA	< 90-Day Accumulation Area	240		Newly constructed; No release observed	1A	2
UST 240B	65	NFA	Underground Storage Tank	240	X	RFA recommended NFA	1A	7
OWS 240C	66	NFA	Oil/Water Separator	240	X	Combined with SWMU/AOC 65	1A	7
SAA 242	67	FA in IRP (5)	< 90-Day Accumulation Area	242		Located in IRP Site 13 (5)	1A	7
OWS 244	68	NFA	Oil/Water Separator	244		Location not known (3)	5A	7
	69	NFA	Drum Storage Area	262		Source: 1989 RWQCB letter (3)	1B (7)	NA
SAA 289	70	NFA	< 90-Day Accumulation Area	289	X	RFA recommended NFA	5A	3
IRP 7	71	FA in IRP (2)	< 90-Day Accumulation Area	295		To be addressed in IRP Site 7 (2)	5A	6
IRP 7	72	FA in IRP (2)	< 90-Day Accumulation Area	296		To be addressed in IRP Site 7 (2)	5A	6
SAA 297	73	NFA	< 90-Day Accumulation Area	297	X	RFA recommended NFA	5A	3
RFA 74	74	NFA	Aircraft Wash Area	297		Located on Tarmac	5A	1
UST T11	75	NFA	Underground Storage Tank	297		Spill Containment Tank	4A	7
OWS 297B	76	NFA	Oil/Water Separator	297	X	RFA recommended NFA	5A	7

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UST 297C	77	NFA	Underground Storage Tank	297	X	Combined with SWMU/AOC 76	5A	7
	78	NFA	Drum Storage Area	297		Source: 1980 DHS photograph (3)	5A (7)	NA
	79	NFA	Drum Storage Area	297		Source: 1980 DHS photograph (3)	5A (7)	NA
	80	NFA	Drum Storage Area	297		Source: 1980 DHS photograph (3)	5A (7)	NA
	81	NFA	Drum Storage Area	297		Source: 1980 DHS photograph (3)	5A (7)	NA
	82	NFA	Drum Storage Area	297		Source: 1980 DHS photograph (3)	5A (7)	NA
SAA 298	83	NFA	< 90-Day Accumulation Area	298	X	RFA recommended NFA	4A	2
OWS 298C	84	FA	Oil/Water Separator	298	X	RFA recommended leak test/inspection of OWS	4A	7
UST 298D	85	FA	Underground Storage Tank	298	X	Combined with SWMU/AOC 84	4A	7
SAA 306	88	FA	< 90-Day Accumulation Area	306	X	Unknown levels of SVOCs in shallow soil; RFA and DTSC recommended additional investigation; sampling scheduled for 1995	4A	7
	89	NFA	Drum Storage Area	306		Source: 1980 DHS photograph (3)	4A (7)	NA
IRP 12	90	FA in IRP	Former Sewage Treatment Plant	307	X	To be addressed in IRP Site 12	4B	6
UST 314A	91	NFA	Underground Storage Tank	314	X	RFA recommended NFA	4A	7
UST 314B	92	NFA	Underground Storage Tank	314	X	RFA recommended NFA	4A	7
SAA 317	93	NFA	< 90-Day Accumulation Area	317		Detergent storage only	4B	2
IRP 21	94	FA in IRP (2)	< 90-Day Accumulation Area	320		To be addressed in IRP Site 21 (2)	4B (7)	6
RFA 95	95	NFA	Engine Test Cell	324	X	RFA recommended NFA	4A	3
	96	NFA	Drum Storage Area	343		Source: RWQCB letter (3)	5A (7)	NA
SAA 357	97	NFA	< 90-Day Accumulation Area	357		No evidence of releases observed	4A	2
RFA 98	98	NFA	Vehicle Wash Rack	359	X	RFA recommended NFA	4B	2
SAA 359B	99	NFA	< 90-Day Accumulation Area	359	X	RFA recommended NFA	4B	3
RFA 100	100	NFA	TCE Degreaser	359	X	RFA recommended NFA	4B	3
OWS 359B	101	NFA	Oil/Water Separator	359	X	RFA recommended NFA	4B	7
UST 359C	102	NFA	Underground Storage Tank	359	X	RFA recommended NFA	4B	6

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Database Tracking	SWMU/AOC Number (1)	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	BCP Area Type
	103	NFA	Drum Storage Area	359		Source: 1980 DHS photograph (3)	4B (7)	NA
IRP 8	104	FA in IRP (2)	< 90-Day Accumulation Area	360		To be addressed in IRP Site 8 (2)	5A (7)	6
IRP 8	105	FA in IRP (2)	< 90-Day Accumulation Area	360		To be addressed in IRP Site 8 (2)	5A (7)	6
IRP 8	106	FA in IRP (2)	< 90-Day Accumulation Area	360		To be addressed in IRP Site 8 (2)	5A (7)	6
SAA 371A	107	NFA	< 90-Day Accumulation Area	371	X	RFA recommended NFA	5A	2
UST T10	108	NFA	Underground Storage Tank	T-10		Spill Containment Tank	5A	7
	109	NFA	< 90-Day Accumulation Area	379		Source: SPCC map (no date) (3)	4A (7)	NA
RFA 110	110	FA	Vehicle Wash Rack	386	X	RFA recommended repair of cracks in pavement	4A	6
OWS 386B	112	NFA	Oil/Water Separator	386	X	RFA recommended NFA	4A	7
UST 386C	113	NFA	Underground Storage Tank	386	X	Combined with SWMU/AOC 112	4A	7
SAA 386	114	NFA	< 90-Day Accumulation Area	386		Source: 1980 DHS photograph; No evidence of release	4A	2
SAA 388A	116	NFA	< 90-Day Accumulation Area	388	X	RFA recommended NFA	4A	3
UST 388B	117	NFA	Underground Storage Tank	388		Fuel Tank, not waste	4A	7
OWS 388C	118	NFA	Oil/Water Separator	388		Location not known (3)	4A	7
SAA 389A	119	NFA	< 90-Day Accumulation Area	389		No evidence of release	3A	2
RFA 120	120	NFA	Vehicle Wash Rack	390	X	RFA recommended NFA	3A	3
	121	NFA	Drum Storage Area	390		Source: 1989 RWQCB letter (3)	3A (7)	NA
SAA 390A	122	NFA	< 90-Day Accumulation Area	390		Source: 1980 DHS photograph; No evidence of release	3A	2
SAA 392A	124	NFA	< 90-Day Accumulation Area	392	X	RFA recommended NFA	2A	3
RFA 125	125	NFA	< 90-Day Accumulation Area	415	X	RFA recommended NFA	2B	2
SAA 442	126	NFA	< 90-Day Accumulation Area	442		New Site; No evidence of release	3A	2
SAA 445	127	NFA	< 90-Day Accumulation Area	445		No evidence of release	4A	2
RFA 128	128	NFA	Storage Area	445		Waste stored inside building	4A	2
UST 445C	129	NFA	Underground Storage Tank	445	X	RFA recommended NFA	4A	7

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Database Tracking	SWMU/AOC Number (1)	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	BCP Area Type
SAA 447	130	NFA	< 90-Day Accumulation Area	447	X	RFA recommended NFA	3A	3
RFA 131	131	FA	Engine Test Cell	447	X	Unknown levels of SVOCs in shallow soil; RFA and DTSC recommended additional investigation; sampling scheduled for 1995	3A	7
OWS 447C	132	NFA	Oil/Water Separator	447	X	RFA recommended NFA	3A	7
	133	NFA	< 90-Day Accumulation Area	453		Source: SPCC map (no date) (3)	3A (7)	NA
	134	NFA	< 90-Day Accumulation Area	454		Source: SPCC map (no date) (3)	3A (7)	NA
SAA 456	135	NFA	< 90-Day Accumulation Area	456		No evidence of release	3A	2
RFA 136	136	NFA	Aircraft Wash Area	461		Located on Tarmac	5A	1
UST 461	137	NFA	Underground Storage Tank	461	X	RFA recommended NFA	5A	7
SAA 461	138	NFA	< 90-Day Accumulation Area	461	X	RFA recommended NFA	5A	2
UST 462	139	NFA	Underground Storage Tank	462	X	RFA recommended NFA	5A	7
SAA 462	140	NFA	< 90-Day Accumulation Area	462		Located on Tarmac	5A	2
RFA 141	141	NFA	Aircraft Wash Area	463		Surface free of defects	5A	1
	142	NFA	Drum Storage Area	463		Source: 1989 RWQCB letter (3)	5A (7)	NA
UST 493	143		Underground Storage Tank	493		Location not known (3)	NL	7
SAA 529	144	NFA	< 90-Day Accumulation Area	529	X	RFA recommended NFA	4A	2
UST 529	145	FA	Underground Storage Tank	529	X	LUFT levels exceeded; RFA recommended additional borings	4A	6
SAA 534	146	NFA	< 90-Day Accumulation Area	534		Stored inside building	4B	2
SAA 602	147	NFA	< 90-Day Accumulation Area	602	X	RFA recommended NFA	2A	3
OWS 602	148	NFA	Oil/Water Separator	602		Location not known (3)	2A	7
SAA 605	149	NFA	< 90-Day Accumulation Area	605	X	RFA recommended NFA	5A	3
RFA 150	150	NFA	Aircraft Wash Area	605		Located on Tarmac	5A	1
OWS 605C	151	FA	Oil/Water Separator	605	X	RFA recommended leak test/inspection of OWS	5A	7
RFA 152	152	NFA	Aircraft Wash Area	606		Located on Tarmac	5A	1

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Database Tracking	SWMU/AOC Number (1)	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	BCP Area Type
UST 625	156	FA in IRP (5)	Underground Storage Tank	625		Located in IRP Site 20 (5)	1B	7
IRP 20	157	FA in IRP (2)	Vehicle Wash Rack	626		Located in IRP Site 20 (2)	1B (7)	6
SAA 626	158	FA in IRP (5)	< 90-Day Accumulation Area	626		Located in IRP Site 20 (5)	1B	7
OWS 626-1	159	FA in IRP (5)	Oil/Water Separator	626		Located in IRP Site 20 (5)	1B	7
SAA 636	160	NFA	< 90-Day Accumulation Area	636	X	RFA recommended NFA	3A	3
UST 643A	162	NFA	Underground Storage Tank	643	X	RFA recommended NFA	5A	7
OWS 643B	163	NFA	Oil/Water Separator	643	X	Combined with SWMU/AOC 162	5A	7
RFA 164	164	NFA	Vehicle Wash Rack	651	X	RFA recommended NFA	1G	3
SAA 651	165	NFA	< 90-Day Accumulation Area	651	X	Located on/combined with SWMU/AOC 164	1G	3
UST 651-5	166	NFA	Underground Storage Tank	651		No sampling based on 1990 tank test (product oil)	1G	7
UST 651-6	167	NFA	Underground Storage Tank	651		No sampling based on 1990 tank test (product oil)	1G	7
UST 651-7	168	NFA	Underground Storage Tank	651		No sampling based on 1990 tank test	1G	7
OWS 651-8	169	NFA	Oil/Water Separator	651	X	Combined with SWMU/AOC 164	1G	7
	170	NFA	Drum Storage Area	655		Source: 1989 RWQCB letter (3)	4A (7)	NA
SAA658	171	FA	< 90-Day Accumulation Area	658	X	Unknown levels of SVOCs in shallow soil; RFA and DTSC recommended additional investigation; sampling scheduled for 1995	2A	7
SAA 671	172	NFA	< 90-Day Accumulation Area	671	X	RFA recommended NFA	4A	2
OWS 671	173	FA	Oil/Water Separator	671	X	LUFT levels exceeded; RFA recommended additional borings	4A	6
UST 672	174	NFA	Underground Storage Tank	672		Exact location not known (3) EG&G Field Inspection Conducted in 1993	4A	7
OWS 672A	175	FA	Oil/Water Separator	672	X	LUFT levels exceeded; RFA recommended additional borings	4A	6
UST 672B	176	FA	Underground Storage Tank	672	X	LUFT levels exceeded; RFA recommended additional borings	4A	6
SAA 672	177	NFA	< 90-Day Accumulation Area	672		Product Storage	4A	2
RFA 178	178	NFA	Vehicle Wash Rack	673		No evidence of release	3A	1
OWS 673A	179	NFA	Oil/Water Separator	673	X	RFA recommended NFA	3A	7

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UST 673B	180	NFA	Underground Storage Tank	673	X	Combined with SWMU/AOC 179	3A	7
RFA 181	181	NFA	Landfarming Area	673	X	RFA recommended NFA	3B	3
	182	NFA	Drum Storage Area	673		Source: 1980 DHS photograph (3)	3B (7)	NA
	183	NFA	Drum Storage Area	673		Source: 1980 DHS photograph (3)	3B (7)	NA
	184	NFA	Drum Storage Area	673		Source: 1980 DHS photograph (3)	3B (7)	NA
	185	NFA	Drum Storage Area	673		Source: 1980 DHS photograph (3)	3B (7)	NA
SAA 673	186	NFA	< 90-Day Accumulation Area	673	X	RFA recommended NFA	3A	2
UST 674A	187	NFA	Underground Storage Tank	674	X	RFA recommended NFA	4B	7
UST 675A	188	NFA	Underground Storage Tank	675	X	RFA recommended NFA	4B	7
OWS 674	189	NFA	Oil/Water Separator	674	X	Combined with SWMU/AOC 187	4B	7
UST 706	191	NFA	Underground Storage Tank	706		Location not known (demolished in 1987) (3)	NL	7
UST 716A	192	NFA	Underground Storage Tank	716		No sampling based on 1990 tank test	5A	7
OWS 716B	193	NFA	Oil/Water Separator	716	X	RFA recommended NFA	5A	7
IRP 3	194	FA in IRP	Former Incinerator Site	746	X	To be addressed in IRP Site 3	2A	6
RFA 195	195	NFA	Vehicle Wash Rack	758	X	RFA recommended NFA	4A	2
OWS 758A	196	NFA	Oil/Water Separator	758	X	RFA recommended NFA	4A	7
UST 758B	197	NFA	Underground Storage Tank	758	X	Combined with SWMU/AOC 196	4A	7
RFA 198	198	FA	Vehicle Wash Rack	759	X	RFA recommended repair of cracks in pavement	4A	6
OWS 759A	199	FA	Oil/Water Separator	759	X	RFA recommended leak test/inspection of OWS	4A	7
UST 759B	200	FA	Underground Storage Tank	759	X	Combined with SWMU/AOC 199	4A	7
RFA 201	201	FA	Vehicle Wash Rack	760	X	RFA recommended repair of cracks in pavement	4A	6
UST 760A	202	NFA	Underground Storage Tank	760	X	RFA recommended NFA	4A	7
OWS 760B	203	NFA	Oil/Water Separator	760	X	Combined with SWMU/AOC 202	4A	7
RFA 204	204	FA	Vehicle Wash Rack	761	X	RFA recommended repair of cracks in pavement	5A	6
OWS 761A	205	NFA	Oil/Water Separator	761	X	RFA recommended NFA	5A	7

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UST 761B	206	NFA	Underground Storage Tank	761	X	Combined with SWMU/AOC 205	5A	7
OWS 762A	208	NFA	Oil/Water Separator	762	X	RFA recommended NFA	3A	7
UST 762B	209	NFA	Underground Storage Tank	762	X	Combined with SWMU/AOC 208	3A	7
RFA 210	210	NFA	Vehicle Wash Rack	763		Surface free of defects	5A	1
OWS 763A	211	NFA	Oil/Water Separator	763	X	RFA recommended NFA	5A	7
UST 763B	212	NFA	Underground Storage Tank	763	X	Combined with SMWU/AOC 211	5A	7
RFA 213	213	FA	Vehicle Wash Rack	764	X	RFA recommended repair of cracks in pavement	2A	6
UST 764A	214	NFA	Underground Storage Tank	764	X	RFA recommended NFA	2A	7
OWS 764B	215	NFA	Oil/Water Separator	764	X	Combined with SWMU/AOC 214	2A	7
RFA 216	216	NFA	Vehicle Wash Rack	765		Surface free of defects	1A	1
UST 765A	217	FA in IRP (5)	Underground Storage Tank	765		Located in IRP Site 13 (5)	1A	7
OWS 765B	218	FA in IRP (5)	Oil/Water Separator	765		Located in IRP Site 13 (5)	1A	7
RFA 219	219	NFA	Vehicle Wash Rack	766		Surface free of defects	1A	1
OWS 766A	220	NFA	Oil/Water Separator	766	X	RFA recommended NFA	1A	7
UST 766B	221	NFA	Underground Storage Tank	766	X	Combined with SWMU/AOC 220	1A	7
SAA 769	222	NFA	< 90-Day Accumulation Area	769	X	RFA recommended NFA	4A	2
SAA 770	223	NFA	< 90-Day Accumulation Area	770	X	RFA recommended NFA	4A	3
SAA 771	224	NFA	< 90-Day Accumulation Area	771	X	RFA recommended NFA	1D	2
SAA 772	225	NFA	< 90-Day Accumulation Area	772	X	RFA recommended NFA	3F	3
SAA 778	226	NFA	< 90-Day Accumulation Area	778	X	RFA recommended NFA	5A	3
SAA 779	227	NFA	< 90-Day Accumulation Area	779	X	RFA recommended NFA	5A	3
UST T9	228	NFA	Underground Storage Tank	779		Recently installed fuel slop tank	5A	7
SAA 800	229	NFA	< 90-Day Accumulation Area	800	X	RFA recommended NFA	4B	2
UST 800D	230	NFA	Underground Storage Tank	800		No sampling based on 1990 tank test	4B	7
UST 800E	231	NFA	Underground Storage Tank	800	X	RFA recommended NFA	4B	7

Table 3-13
Summary of SWMUs/AOCs
MCAS El Toro BCP - March 1995

Database Tracking	SWMU/AOC Number (1)	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	BCP Area Type
OWS 800F	232	NFA	Oil/Water Separator	800	X	RFA recommended NFA	4B	7
OWS 817	233	NFA	Oil/Water Separator	817	X	RFA recommended NFA	3F	7
SAA 856	234	NFA	< 90-Day Accumulation Area	856	X	RFA recommended NFA	3A	3
SAA 761	236	FA in IRP (5)	< 90-Day Accumulation Area	1663		Located in IRP Site 6 (5)	5A (7)	7
	237	NFA	< 90-Day Accumulation Area	1700		Source: SPCC map (no date) (3)	NL	NA
	238	NFA	< 90-Day Accumulation Area	1727		Source: SPCC map (no date) (3)	4A (7)	NA
	239	NFA	Drum Storage Area	1798		Source: 1989 RWQCB letter (3)	2B (7)	NA
SAA 155A	240	NFA	< 90-Day Accumulation Area	155		No evidence of release	5A	2
SAA 155B	241	NFA	< 90-Day Accumulation Area	155	X	RFA recommended NFA	5A	3
SAA 371B	242	NFA	< 90-Day Accumulation Area	371	X	RFA recommended NFA	5A	3
RFA 243	243	NFA	Wash Rack	96	X	RFA recommended NFA	4A	3
PCB T74	244	NFA	PCB Spill Area	457	X	Additional investigation recommended by DTSC; sampling scheduled for 1995	3A	7
RFA 245	245	NFA	Golf Course	464		Treated sanitary wastewater applied	3F	1
RFA 246	246	NFA	Golf Course Irrigation Tank	459		Stored treated sanitary wastewater	3F	1
RFA 247	247	NFA	Irrigation Pipeline	SW and SE quadrants		Transferred from Former Sewage Treatment Plant to Irrigation Tank at Golf Course	NA	1
OWS 845	248	NFA	Oil/Water Separator	463	X	RFA recommended NFA	3A	7
UST 463	249	NFA	Underground Storage Tank	463	X	RFA recommended NFA	5A	6
UST 655	250	NFA	Underground Storage Tank	655	X	RFA recommended NFA	4A	2*
SAA 388B	251	NFA	< 90-Day Accumulation Area	388		No evidence of release/surface defects	4A	2
SAA 398	252	NFA	< 90-Day Accumulation Area	398	X	RFA recommended NFA	5A	3
RFA 253	253	NFA	Wash Rack	317	X	RFA recommended NFA	4B	2
SAA 359A	254	NFA	< 90-Day Accumulation Area	359		No evidence of release	4B	2
SAA 606	255	NFA	< 90-Day Accumulation Area	606	X	RFA recommended NFA	5A	2
SAA 441	256	NFA	< 90-Day Accumulation Area	441	X	RFA recommended NFA	3A	3

Table 3-13
Summary of SWMUs/AOCs
MCAS El Toro BCP - March 1995

Database Tracking	SWMU/AOC Number (1)	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	BCP Area Type
RFA 257	257	NFA	Wash Water Runoff Site	575	X	RFA recommended NFA	5A	2
RFA 258	258	NFA	Wash Water Runoff Site	577	X	RFA recommended NFA	5A	2
SAA 389B	259	NFA	< 90-Day Accumulation Area	389		Drum storage not confirmed	3A	2
RFA 260	260	FA	Aboveground Storage Tank (former)	389	X	RFA recommended repair of cracks in pavement; DTSC recommended additional investigation; sampling scheduled for 1995	3A	7
SAA 390B	261	NFA	< 90-Day Accumulation Area	390	X	RFA recommended NFA	3A	3
RFA 262	262	NFA	Fuel Storage Area	390	X	RFA recommended NFA	3A	2
UST 374A	263	NFA	Underground Storage Tank	374	X	RFA recommended NFA	3A	3*
RFA 264	264	NFA	Equipment Storage Area	DRMO Lot #3	X	RFA recommended NFA; DTSC recommended additional sampling; sampling scheduled for 1995	3B	7
IRP 24	265	NFA	Metal Plating Sewer Lines (2)	SW quadrant of Station	X	RFA recommended NFA	NA	6
SAA 765	266	NFA	< 90-Day Accumulation Area	765		Surface free of defects	3F	2
RFA 267	267	NFA	Drop Tank Fuel Storage Area	605		Additional investigation recommended by DTSC (6)	5A	2
RFA 268	268	NFA	Vehicle Wash Rack	240		Surface free of defects	1A	1
SAA 314	269	NFA	< 90-Day Accumulation Area	314	X	RFA recommended NFA	4A	3
RFA 270	270	NFA	Wash Rack	817	X	RFA recommended NFA	3F	2
SAA 392B	271	NFA	< 90-Day Accumulation Area	392	X	RFA recommended NFA	2A	3
SAA 31A	272	NFA	< 90-Day Accumulation Area	31	X	RFA recommended NFA	1D	3
RFA 273	273	NFA	Wash Rack	31	X	RFA recommended NFA	1D	2
RFA 274	274	NFA	Stockpiled Soil	31		No evidence of release	1D	1
UST 186	275	NFA	Underground Storage Tank	Tank Farm #1	X	RFA recommended NFA	1D	7
UST 187	276	NFA	Underground Storage Tank	Tank Farm #1	X	RFA recommended NFA	1D	7
UST 188	277	NFA	Underground Storage Tank	Tank Farm #3	X	RFA recommended NFA	1A	7
UST 190	278	NFA	Underground Storage Tank	Tank Farm #3	X	RFA recommended NFA	1A	7
UST 193	279	NFA	Underground Storage Tank	Tank Farm #3	X	RFA recommended NFA	1A	7

Table 3-13
Summary of SWMUs/AOCs
MCAS El Toro BCP - March 1995

Database Tracking	SWMU/AOC Number (1)	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	BCP Area Type
UST 195	280	FA	Underground Storage Tank	Tank Farm #3	X	LUFT levels exceeded; RFA recommended additional borings	1A	6
UST 252	281	NFA	Underground Storage Tank	252		Location not known (inactive) (3)	NL	7
UST 322B	282	NFA	Underground Storage Tank	322	X	RFA recommended NFA; tank removal soil samples exceeded LUFT levels	4B	6
UST 326B	283	NFA	Underground Storage Tank	326	X	RFA recommended NFA	4A	7
UST 347D	284	NFA	Underground Storage Tank	347D		Inactive, Tank Filled with Sand (3)	1B	7
UST 399	285	NFA	Underground Storage Tank	399		Inactive (3)	5A	7
UST 733B	286	NFA	Underground Storage Tank	733	X	RFA recommended NFA	1G	7
UST 733C	287	NFA	Underground Storage Tank	733	X	RFA recommended NFA	1G	7
UST 850A	288	FA in IRP (5)	Underground Storage Tank	850A		Located in IRP Site 16 (5)	5A	7
UST 850B	289	FA in IRP (5)	Underground Storage Tank	850B		Located in IRP Site 16 (5)	5A	7
UST 850C	290	FA in IRP (5)	Underground Storage Tank	850C		Located in IRP Site 16 (5)	5A	7
OWS 96	291	NFA	Oil/Water Separator	96	X	RFA recommended NFA	4A	7
OWS 675B	292	NFA	Oil/Water Separator	675	X	Combined with SWMU/AOC 188	5A	7
RFA 293	293	NFA	Cleaning Tank	130		Surface free of defects	2A	2
SAA 130A	294	NFA	< 90-Day Accumulation Area	130		Surface free of defects	2A	2
SAA 130B	295	NFA	< 90-Day Accumulation Area	130		Surface free of defects	2A	2
OWS 357	296	NFA	Oil/Water Separator	357	X	RFA recommended NFA	4A	7
RFA 297	297	NFA	Former Asphalt Pavement Plant	Northeast of Golf Course		No remaining evidence of plant	5A	1
UST 392A	298	FA	Underground Storage Tank	392	X	RFA recommended leak test/inspection of UST	2A	7
RFA 299	299	NFA	Wash Rack	800		Surface free of defects	4B	1
IRP 3	300	FA in IRP	Spill Area East of SWMU/AOC 194	746	X	To be addressed in IRP Site 3	2A	6
RFA 301	301	NFA	Mark Arrest System	East side of Runway 34R	X	RFA recommended NFA	5A	2
RFA 302	302	NFA	Mark Arrest System	West side of Runway 34R	X	RFA recommended NFA	5A	2
UST 359A	303	NFA	Underground Storage Tank	359	X	RFA recommended NFA	4B	2*

Table 3-13
Summary of SWMUs/AOCs
MCAS El Toro BCP - March 1995

Database Tracking	SWMU/AOC Number (1)	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	BCP Area Type
RFA 304	304	NFA	Trenches inside Building 359	359		Inside Bldg; No evidence of release	4B	1
RFA 305	305	NFA	Septic Tank	601		Sanitary waste	5C	1
RFA 306	306	NFA	Septic Tank	687		Sanitary waste	1F	1
RFA 307	307	NFA	Septic Tank	819		Sanitary waste	1F	1

NOTES:

- (1) SWMU/AOCs identified as duplicate locations are not included in this table. Refer to Table 4-1 of the Final RFA Report dated 16 July 1993 for a complete list of SWMUs/AOCs.
- (2) SWMU/AOC is located within RI/FS site boundaries and, therefore, was not evaluated in the RFA. These SWMUs/AOCs are being addressed under the IRP.
- (3) SWMU/AOC was not able to be accurately located or identified from the records review information and the visits conducted as part of the RFA.
- (4) These sites were not plotted on the GIS map because they were not evaluated under the PR/VS.
- (5) SWMU/AOC is located within RI/FS site boundaries; however, it will be addressed in a closure-related compliance program.
- (6) DTSC recommended further investigation based on PR/VS description, which stated that the drop tank storage area was located on damaged asphalt. This area is actually concrete-paved (tarmac) and, therefore, was not recommended for sampling during the RFA. No further investigation is anticipated at this SWMU/AOC.
- (7) These sites were not plotted on the GIS map because they were not evaluated under the PR/VS. The parcels listed correspond to the nearest building location.

* = Pending agency approval.

FA = further action

IRP = Installation Restoration Program

NA = Not applicable. The SWMU/AOC is a large unit that is located in several different parcels.

NL = Not located. Unable to locate building or device on historical plans for MCAS El Toro.

NFA = No further action

NEESA = Naval Energy and Environmental Support Activity

SVOC = semi-volatile organic compounds

SOURCE:

Jacobs, 1993. MCAS El Toro Final RCRA Facility Assessment Report.

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Table 3-14
Oil/Water Separator Inventory
MCAS El Toro BCP - March 1995

Database Tracking	OWS No.	Parcel	Location/ Nearest Building No.	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status (1)	Closure/ Removal/ Abandon. Date	Contents	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source	BCP Area Type
OWS 96	96	4A	96	Unknown	Unknown/ Unknown	Unknown	From RFA: SWMU 291-NFA. From LCR: Appears to be abandoned. Two vertical below grade pipes/ports observed in the wash rack. Unsure if OWS is located here.	No further action recommended in the RFA based on soil sample results. Termination of washing activities recommended in LCR.	LC	Unknown	Unknown	Oil/water	Unknown	X	B,C,D	7
OWS 240C	240C	1A	240	1982	100/ Steel	Active	From RFA: SWMU 66 -(comb w/SWMU 65)-NFA. In the LCR, OWS adjacent to a UST was full of waste oil and did not appear to be used.	No further action recommended in the RFA based on soil sample results. If the wash rack and OWS are to be abandoned, the LCR recommendations were to remove the OWS and its contents, fill the excavation and pave the area to grade.	LC		Oil/water	Oil/water	Yes (UST 240B)	X	A,B,C,D	7
OWS 244	244	5A	244	1944	100/ Concrete	Active	From RFA: SWMU 68-not sampled; no evidence of a OWS was observed.		LC		Oil/water	Oil/water	Unknown		A,B,D	7
OWS 280A	280A	1B	280	Unknown	200/ Concrete	Active	The OWS appeared structurally sound.	Maintenance and repair work at the OWS was recommended in LCR.	LC				No		C	7
OWS 297B	297B	5A	297	1982	100/ Steel	Active	From RFA: SWMU 76-NFA. SWMU 77 (UST 297C) is the tank associated with the OWS.	No further action recommended in the RFA based on soil sample results.	S		Oil/water	Oil/water	Yes (UST 297C)	X	A,B,D	7
OWS 298C	298C	4A	298	1982	100/ Steel	Active	SWMU 84 - FA. From LCR: OWS appeared sound. ~ 5-20 gpm of waste produced. Electric butterfly valves at OWS which are not fully functional results in flows to storm drain.	Further investigation of the oil/water separator's current condition by leak testing and inspection is recommended in the RFA.	S		Oil/water	Oil/water	Yes (UST 298D)	X	A,B,C,D	7
	312	4A	312	Unknown	Unknown/ Unknown	Unknown	OWS was identified in a 1994 RWQCB letter as an OWS for a photo lab.		SB	Unknown	Unknown	Unknown	Unknown		E	7
OWS 314C	314C	4A	314	Unknown	2,200/ Concrete	Inactive	From LCR: OWS not in use; upstream drains cemented. Structural condition was sound.	LCR suggests oil/water separator could be removed and the excavation filled in, compacted and covered with asphalt.	LC	Unknown	Oil/water	Oil/water	No		C	7
OWS 324-1	324-1	4A	324	Unknown	Unknown/ Steel	Inactive	From LCR: OWS no longer used; internal drains cemented. Structural condition was rusty. Contents from OWS can be pumped through a threaded fitting to a port on parking lot. Appears to be no longer maintained.	LCR suggests oil/water separator could be removed and the excavation filled in, compacted and covered with asphalt. OWS slated for removal according to El Toro staff.	LC	Unknown	Oil/water	Oil/water	No		C	7
OWS 324-2	324-2	4A	324	Unknown	Unknown/ Steel	Inactive	From LCR: OWS no longer used; internal drains cemented. Structural condition was rusty. Contents from OWS can be pumped through a threaded fitting to a port on parking lot. Port appears to be no longer maintained.	LCR suggests oil/water separator could be removed and the excavation filled in, compacted and covered with asphalt. OWS slated for removal according to El Toro staff.	LC	Unknown	Oil/water	Oil/water	No		C	7
OWS 357	357	4A	357	Unknown	200/ Steel	Unknown	SWMU 296-NFA. From LCR: unknown if OWS still in use. OWS condition was rusty, disconnected at head pipes. OWS scheduled for repairs according to El Toro staff.	No further action recommended in the RFA based on soil sample results. The Law/Crandall recommendations were to either repair the OWS inlet lines or abandon the OWS, plug the floor drains with cement, and remove the external water source.	LC	Unknown	Oil/water	Oil/water	No	X	B,C,D	7
OWS 359B	359B	4B	359	1952	100/ Concrete	Active	From RFA: SWMU 101-NFA.	No further action recommended in the RFA based on soil sample results.	LC		Oil/water	Oil/water	Unknown	X	A,B,D	7

Table 3-14
Oil/Water Separator Inventory
MCAS El Toro BCP - March 1995

Database Tracking	OWS No.	Parcel	Location/ Nearest Building No.	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status (1)	Closure/ Removal/ Abandon. Date	Contents	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source	BCP Area Type
OWS 371	371	3A	371	Unknown	2,350/ Steel	Active	From LCR: OWS condition unknown. Waste oil level alarm in place (on during survey). OWS scheduled for maintenance/cleaning according to El Toro staff.	The OWS should be pumped out according to the LCR.	LC		Oil/water	Oil/water	No		C	7
OWS 386B	386B	4A	386	1982	100/ Steel	Active	From RFA: SWMU 112-NFA. From LCR: Vault full of sediment. OWS condition appeared sound. Steel UST adjacent to OWS. Butterfly valves not functioning properly-flows to storm drain. OWS under repair in 2/94 according to El Toro staff.	No further action recommended in the RFA based on soil sample results. The OWS should be cleaned and the electrical valves tested to determine what repairs are needed per the LCR.	LC		Oil/water	Oil/water	Yes (UST 386C)	X	A,B,C,D	7
OWS 388C	388C	4A	388	1955	100/ Steel	Active	From RFA: SWMU 118-not sampled; CWS not located on NW side of Bldg 388. From LCR: OWS buried with sediment - unable to access. Non-functioning butterfly valves causing discharge to storm drains. OWS under construction/repair according to El Toro staff.	The OWS should be cleaned and the electrical valves tested to determine what repairs are needed per the LCR.	S		Oil/water	Oil/water	Yes (UST 388B)		A,B,C,D	7
	439	1G	439	Unknown	Unknown/ Unknown	Unknown	OWS identified in a 1994 RWQCB letter as an OWS for a dental lab.		SB	Unknown	Unknown	Unknown	Unknown		E	7
OWS 445	445	4A	445	Unknown	Unknown/ Precast Concrete	Inactive	From LCR: OWS does not appear to be used; Building used for storage. During survey OWS covered by heavy box.	If hazardous materials exist in OWS, the materials should be removed and the OWS closed, per the LCR. OWS slated for removal according to El Toro staff.	LC	Unknown	Oil/water	Oil/water	No		C,F	7
OWS 447C	447C	5A	447	1959	800/ Precast Concrete	Active	From RFA: SWMU 132-NFA; covers which may belong to a OWS identified. Listed as a 100 gal steel OWS in Station database. From LCR: precast concrete, 800 gal; appears sound. Flow modification from OWS to sanitary sewer scheduled according to El Toro staff.	No further action recommended in the RFA based on soil sample results.	S		Oil/water	Oil/water	No	X	A,B,C,D,F	7
OWS 461A	461A	5A	461	Unknown	50/ Steel	Active	OWS scheduled for maintenance work according to El Toro staff.	The LCR suggests the OWS should be opened and inspected for sediment and sludge build up.	LC		Oil/water	Oil/water	Unknown		C,F	7
OWS 462	462A	5A	462	Unknown	50/ Steel	Active			LC		Oil/water	Oil/water	Unknown		C	7
OWS 602	602	2A	602	1964	Unknown/ CC	Inactive	From RFA: SWMU 148-not sampled; no OWS observed during visit; could be OWS at Bldg 764 located 100 ft west of Bldg 602.	OWS scheduled for removal per 1993 Station UST Inventory.	SB		Oil/water	Oil/water	Unknown		A,B,D,F	7

Table 3-14
Oil/Water Separator Inventory
MCAS El Toro BCP - March 1995

Database Tracking	OWS No.	Parcel	Location/ Nearest Building No.	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status (1)	Closure/ Removal/ Abandon. Date	Contents	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source	BCP Area Type
OWS 605C	605C	5A	605	1984	300/ Steel	Active	From RFA: SWMU 151-FA; concrete a ea around OWS appeared darkly stained. From LCR: 300 gal cap.; ~125 gal dry IJST adjacent to OWS. OWS scheduled for repairs according to El Toro staff.	Further investigation of the OWS current condition by leak testing and inspection was recommended by the RFA. Sediments should be removed from the OWS, and electrical diversion valves installed. The waste oil pump should be replaced per the LCR.	LC		Oil/water	Oil/water	Unknown	X	A,B,C,D,F	7
OWS 606C	606C	5A	606	1965	100/ Concrete	Active	From RFA: SWMU 154-not sampled; CWS thought to be OWS 643B; drains leading to OWS 643B located 10 ft south of Bldg 606.		LC		Oil/water	Oil/water	Unknown		A,B,D	7
OWS 626-1	626-1	1B	625	1967	600/ Concrete	Active	SWMU 159-not sampled; located within RI/FS Site 20 boundaries. From LCR: 500 gal cap., precast concrete, fuel odor emitted; top portion of OWS and surrounding slab cracked. OWS scheduled for repairs according to El Toro staff.	Oil staining observed downgradient of catch basin indicating catch basin is releasing oil according to LCR. The LCR suggests increasing the capture efficiency of the catch basin.	LC		Oil/water	Oil/water	No		A,B,C,D,F	7
OWS 626-2	626-2	1B	625	Unknown	580/ Steel	Active	From LCR: OWS appears sound.		LC		Oil/water	Oil/water	No		C	7
OWS 626-3	626-3	1B	625	Unknown	835/ Concrete	Active	From LCR: heavy oil accumulation; OWS appears sound.		LC		Oil/water	Oil/water	No		C	7
OWS 626-4	626-4	1B	625	Unknown	560/ Concrete	Active	From LCR: OWS appears sound.		LC		Oil/water	Oil/water	No		C	7
OWS 643B	643B	5A	643	1982	100/ Steel	Active	From RFA: SWMU 163-not sampled - see comments for OWS 606C; drain to OWS 643B located 10 ft south of Bldg 606. From LCR: 100 gal, steel OWS; appears sound; adjacent to full UST.	The LCR suggests removing sediments and oils and cleaning OWS. OWS slated for removal according to El Toro staff.	LC		Oil/water	Oil/water	Yes (UST 643A)		A,B,C,D,F	7
OWS 651-8	651-8	1G	651	1971	280/ Concrete	Active	SWMU 169-not sampled; antifreeze observed in washrack drain. Listed as a 500 gal concrete OWS in Station database. From LCR: 280 gal precast concrete OWS; appears sound; listed as OWS # 650/651. OWS scheduled for maintenance according to El Toro staff.	The LCR suggests removing oils from OWS and cleaning OWS.	LC		Oil/water	Oil/water	No		A,B,C,D,F	7
OWS 658C	658C	2A	658	1972	400/ Concrete	Active	Listed as a 100 gal OWS in Station database. From LCR: 400 gal OWS in use; OWS appears sound.	A new aboveground OWS is scheduled to be installed according to El Toro staff.	LC		Oil/water	Oil/water	No		A,B,C,F	7
OWS 671	671	4A	671	Unknown	Unknown/ Unknown	Active	From RFA: SWMU 173-FA.	RFA recommended additional borings.	LC		Oil/water	Oil/water	Unknown	X	B,D	7
OWS 672A	672A	4A	672	1982	400/ Steel	Active	SWMU 175-FA; listed as a 1,000 gal steel OWS; eroded asphalt around tank cover. From LCR: 400 gal metal/concrete OWS; appears sound; OWS backs up during heavy washing. El Toro staff list this OWS as under construction/repair.	RFA recommended additional borings. The LCR suggests sediments in OWS be removed, lines be cleaned and frequent inspection and maintenance be implemented.	S		Oil/water	Oil/water	Yes (UST 672B)	X	A,B,C,D,F	7

Table 3-14
Oil/Water Separator Inventory
MCAS El Toro BCP - March 1995

Database Tracking	OWS No.	Parcel	Location/ Nearest Building No.	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status (1)	Closure/ Removal/ Abandon. Date	Contents	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source	BCP Area Type	
OWS 673A	673A	3A	673	1982	895/ Concrete	Active	From RFA: SWMU 179-NFA; stained asphalt noted nearby. Listed as a 100 gal steel OWS in Station database. From LCR: 895 gal concrete OWS; OWS appears sound. Float/alarm installation scheduled for this OWS, according to El Toro staff.	No further action recommended in the RFA based on soil sample results. The LCR recommends the OWS be cleaned.	S		Oil/water	Oil/water	No	X	A,B,C,D,F	7	
OWS 674	674	4B	674	Unknown	1,400/ Steel	Active	From RFA: SWMU 189-NFA; aboveground OWS. From LCR: OWS appears sound; Adjacent to OWS is a 550 gal #7 gauge steel UST; OWS to Bee Canyon Wash. Bee Canyon Discharge Point #002 from NPDES permit issued by the RWQCB.	No further action recommended in the RFA based on soil sample results. Installation of a check dam to capture dry weather flows is recommended in the LCR. A new aboveground OWS is scheduled to be installed according to El Toro staff.	LC		Oil/water	Oil/water	Yes (UST 674)	X	A,B,C,D,F	7	
OWS 675B	675B	4B	675	Unknown	1,400/ Steel	Active	From RFA: SWMU 292-comb w/SWMU 188 NFA; aboveground OWS. From LCR: OWS for Agua Chinon Wash; OWS appears sound; Adjacent to OWS is a 550 gal #7 gauge steel UST.	No further action recommended in the RFA based on soil sample results. Installation of a check dam to capture dry weather flows and clearing of the channel is recommended in the LCR. A new OWS is scheduled to be installed according to El Toro staff.	LC		Oil/water	Oil/water	Yes (UST 675A)	X	A,B,C,D,F	7	
OWS 676	676	2B	676	Unknown	Unknown Unknown	Unknown	OWS not observed in the area of Bldg 676. The LCR reported access could not be gained to a fenced-off area adjacent to the building. It is possible that an oil/water separator is hidden under trash cans stored in this area.	No further action recommended in the RFA based on soil sample results.	SB		Oil/water	Oil/water		X	B,C	7	
OWS 696	696	5A	696	Unknown	Unknown/ Unknown	Unknown	From RFA: SWMU 163-not sampled; OWS 643B located between Bldg 643 and 696.		LC		Unknown	Oil/water	Unknown			B,D	7
OWS 716B	716B	5A	716	1976	100/ Steel	Active	From RFA: SWMU 193-NFA. Concrete OWS listed in 1993 Station UST Inventory. From LCR: Steel OWS (cap. unknown); couldn't be accessed, cover was rusted shut; a 3000 gal fiberglass UST is located 75 feet from Bldg 716.	No further action recommended in the RFA based on soil sample results. Inspection and maintenance of the OWS is recommended in the LCR.	LC		Oil/water	Oil/water	Yes (716A)	X	A,B,C,D	7	
OWS 744	744	1G	744	Unknown	500/ Concrete	Active	From LCR: OWS appears sound. OWS scheduled for repair & maintenance work according to El Toro staff. Flow from OWS will also be rerouted to the sanitary sewer.		LC		Oil/water	Oil/water	No		C,F	7	
OWS 758A	758A	4A	758	1982	100/ Steel	Active	From RFA: SWMU 196-NFA. From LCR: OWS appears sound. OWS under repair/construction as of 2/94 according to El Toro staff.	No further action recommended in the RFA based on soil sample results.	S		Oil/water	Oil/water	Yes (UST 758B)	X	A,B,C,D,F	7	

Table 3-14
Oil/Water Separator Inventory
MCAS El Toro BCP - March 1995

Database Tracking	OWS No.	Parcel	Location/ Nearest Building No.	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status (1)	Closure/ Removal/ Abandon. Date	Contents	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source	BCP Area Type
OWS 759A	759A	4A	759	1982	100/ Steel	Active	From RFA: SWMU 199-FA. From LCR: OWS appears sound; drain line clogged and waste flows from upgradient clean out. OWS under repair/construction as of 2/94 according to El Toro staff.	Further investigation of the oil/water separator current condition by leak testing and inspection is recommended in the RFA report. Cleaning the OWS and drain lines were recommended in the LCR.	S		Oil/water	Oil/water	Yes (UST 759B)	X	A,B,C,D,F	7
OWS 760B	760B	4A	760	1982	100/ Steel	Active	From RFA: SWMU 203-comb w/SWMU 202 NFA; discharges waste oil to UST 760A. OWS under repair/construction as of 2/94 according to El Toro staff.	No further action recommended in the RFA based on soil sample results.	S		Oil/water	Oil/water	Yes (UST 760A)	X	A,B,D,F	7
OWS 761A	761A	5A	761	1982	100/ Steel	Active	SWMU 205-NFA. Listed as active in the Station database. From LCR: OWS status not known, buildings appear abandoned; OWS inundated with water; adjacent UST 1/2 full of water; valve open at storm drain, all discharges to storm drain.	No further action recommended in the RFA based on soil sample results.	S		Oil/water	Oil/water	Yes (UST 761B)	X	A,B,C,D	7
OWS 762A	762A	3A	390	1982	100/ Steel	Active	From RFA: SWMU 208-NFA. From LCR: OWS ID# 390 in LCR; OWS appears sound; adjacent to empty waste oil UST; butterfly valve not functioning-flows to storm drain. OWS under repair/construction as of 2/94 according to El Toro staff.	No further action recommended in the RFA based on soil sample results. The OWS should be cleaned and electrical valves tested to determine what repairs are needed per LCR.	S		Oil/water	Oil/water	Yes (UST 762B)	X	A,B,C,D,F	7
OWS 763A	763A	5A	763	1982	100/ Steel	Active	From RFA: SWMU 211-NFA. From LCR: OWS east of Bldg 698; not in use during survey, new valves being installed; OWS appears sound; UST associated with OWS has 3' of water. OWS under repair/construction according to El Toro staff.	No further action recommended in the RFA based on soil sample results. Cleaning the OWS was recommended in the LCR.	LC		Oil/water	Oil/water	Yes (UST 763B)	X	A,B,C,D,F	7
OWS 764B	764B	2A	764	1982	100/ Steel	Active	From RFA: SWMU 215-comb w/SWMU:214-NFA. From LCR: OWS ID# 392 in LCR; UST adjacent to OWS; wash rack slab has numerous cracks. OWS under repair/construction as of 2/94 according to El Toro staff.	No further action recommended in the RFA based on soil sample results. The OWS should be cleaned per LCR.	LC		Oil/water	Oil/water	Yes (UST 764B)	X	A,B,C,D,F	7
OWS 765B	765B	1A	765	1982	100/ Steel	Active	From RFA: SWMU 218-comb w/SWMU 217. From LCR: OWS appears sound but access covers need replacement; 100 gal UST adjacent to OWS.	Cleaning the lines to the OWS recommended in the LCR.	LC		Oil/water	Oil/water	Yes (UST 765A)		A,B,C,D	7
OWS 766A	766A	1A	766	1982	100/ Steel	Active	From RFA: SWMU 220-NFA. From LCR: Due to heavy rainfall vault box was flooded; UST adjacent to OWS full of oil.	No further action recommended in the RFA based on soil sample results. Water in vault needs to be pumped out and the OWS inspected and cleaned per LCR.	LC		Oil/water	Oil/water	Yes (UST 766B)	X	A,B,C,D	7
OWS 800F	800F	4B	800	1984	1,500/ Concrete	Active	From RFA: SWMU 232-NFA.	No further action recommended in the RFA based on soil sample results.	S		Oil/water	Oil/water	No	X	A,B,D	7

Table 3-14
Oil/Water Separator Inventory
MCAS El Toro BCP - March 1995

Database Tracking	OWS No.	Parcel	Location/ Nearest Building No.	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status (1)	Closure/ Removal/ Abandon. Date	Contents	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source	BCP Area Type
OWS 802	802	4B	802	Unknown	1,000/ Concrete	Active	From LCR: OWS appears sound; needs cleaning. This OWS scheduled for maintenance/cleaning as of 2/94 according to El Toro staff.	Cleaning the OWS recommended in the LCR.	LC		Oil/water	Oil/water	No		C,D,F	7
OWS 817	817	3F	817	Unknown	1,500/ Concrete	Active	From RFA: SWMU 233-NFA. From LCR: OWS does not appear to be used; appears sound. OWS scheduled for maintenance/repairs according to El Toro staff.	No further action recommended in RFA based on soil sample results. Cleaning the OWS recommended in the LCR.	S		Oil/water	Oil/water	No	X	B,C,D,F	7
OWS 845	845	5A	846	Unknown	2,000/ Steel	Inactive	From RFA: SWMU 248-NFA. From LCR: OWS not in use; bolted ports not accessible, steam cleaner not functional; structural condition unknown. Rain diversion valves & controls scheduled to be installed at this OWS according to El Toro staff.		LC		Oil/water	Oil/water	No	X	C,F	7
OWS 850	850	5A	850	Unknown	Unknown/ Unknown	Active	From LCR: OWS located south of burn pits; bolt ports not accessible; UST believed to be associated with and adjacent to OWS. Rain diversion valves & controls scheduled to be installed at this OWS according to El Toro staff.	Additional investigations recommended in the LCR since little information about OWS is available.	LC		Oil/water	Oil/water	Unknown		C,F	7
OWS 892	892	5A	892	Unknown	1,375/ Concrete	Active	From LCR: OWS appears sound; produces approx. 5-20 gpm; in use 4 days/week. Rain diversion valves & controls scheduled to be installed at this OWS according to El Toro staff.		LC		Oil/water	Oil/water	No		C,F	7
OWS 896	896	5A	896	1982	600/ Steel	Active	From LCR: OWS ports bolted; appears sound; may have been built in 1982; 150 gal fiberglass UST located west of OWS; UST and piping double-walled. Rain diversion valves & controls scheduled to be installed at this OWS according to El Toro staff.		LC		Oil/water	Oil/water	Unknown		C,F	7
OWS 897	897	5A	897	Unknown	Unknown/ Steel	Active	From LCR: Waste oil level alarm light on - facility personnel reported problems with level sensor switch. Rain diversion valves & controls scheduled to be installed at this OWS according to El Toro staff.		LC		Oil/water	Oil/water	No		C,F	7
OWS 1702	1702	1B	1702	Unknown	550/ Steel	Active	From LCR: No access to OWS ports; OWS appears sound; adjacent UST and its piping has secondary containment. OWS scheduled for general maintenance/cleaning according to El Toro staff.		LC		Oil/water	Oil/water	Unknown		C,F	7

Table 3-14
Oil/Water Separator Inventory
MCAS El Toro BCP - March 1995

Database Tracking	OWS No.	Parcel	Location/ Nearest Building No.	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status (1)	Closure/ Removal/ Abandon. Date	Contents	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source	BCP Area Type
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Document Source:

- A - MCAS El Toro, 1993. Management Overview of Storage Tanks.
- B - EG&G Idaho, Inc, 1990. Draft USMC MCAS El Toro Underground Storage Tank Survey Report.
- C - Law/Crandall, Inc., 1993. Oil/Water Separator Survey, El Toro Marine Corps Air Station.
- CE - Device under Conditional Exemption for Specified Wastestreams per a letter from DTSC dated 1/10/94.
- D - Jacobs Engineering Group, 1993. MCAS El Toro Final RCRA Facility Assessment Report.
- E - Letter from the Department of Toxic Substance Control (DTSC) to MCAS El Toro on Acknowledgement of Units Operating Under Conditional Authorization and/or Conditional Exemption.
- F - Personal communications with El Toro Staff in February 1994.

(1) Location Status

- LC - Location confirmed.
- S - OWS location identified on historical as-built plan. Location to be confirmed by field survey.
- SB - Location of building confirmed. OWS location to be determined by field survey.

LCR - Law/Crandall Report

NA - Not applicable

NFA - No further action

NT - Not tested

OWS - Oil/Water Separator

RFA - RCRA Facility Assessment

UST - Underground Storage Tank

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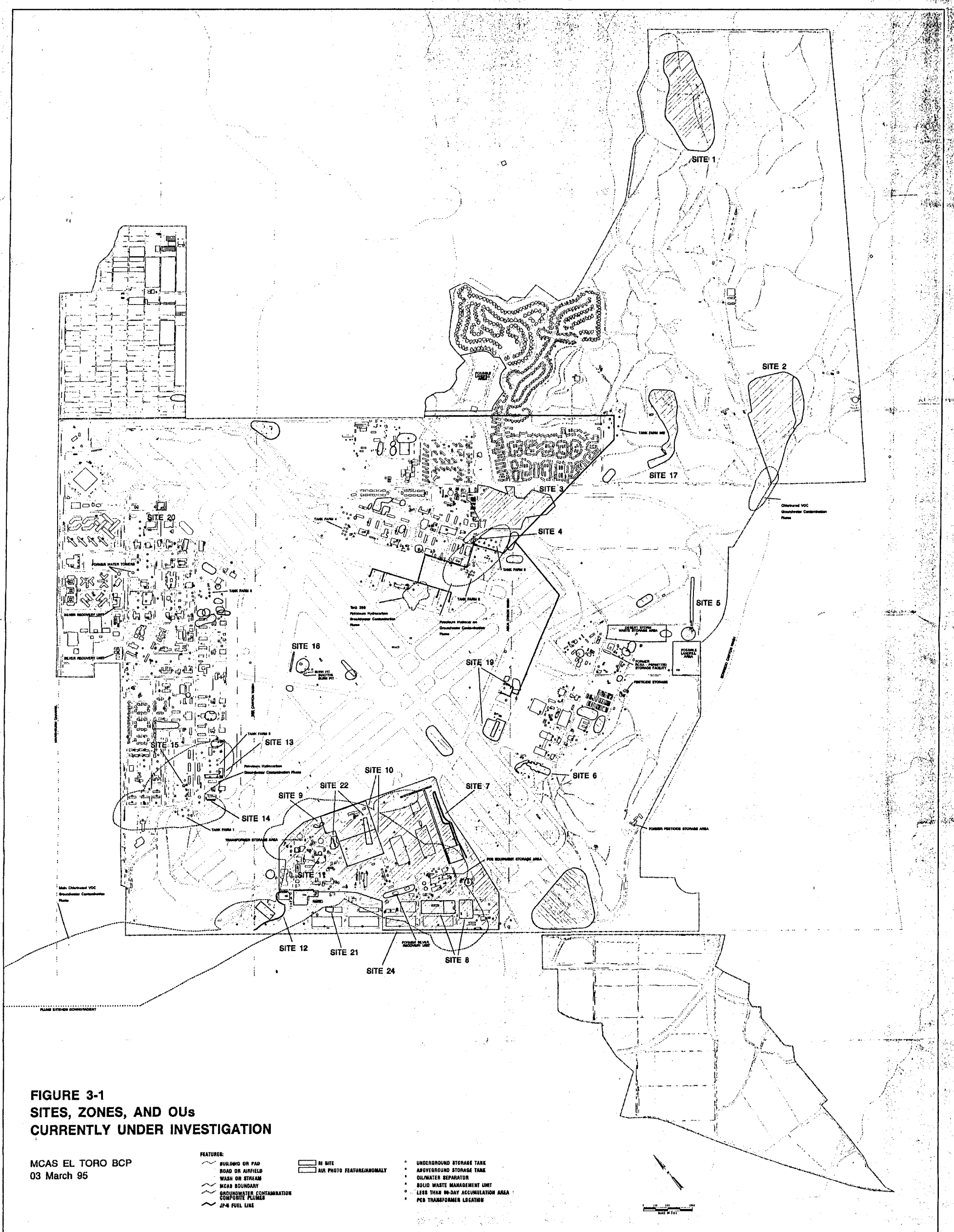
Table 3-15
Vegetative Cover and Other Features within Natural Area
MCAS El Toro BCP - March 1995

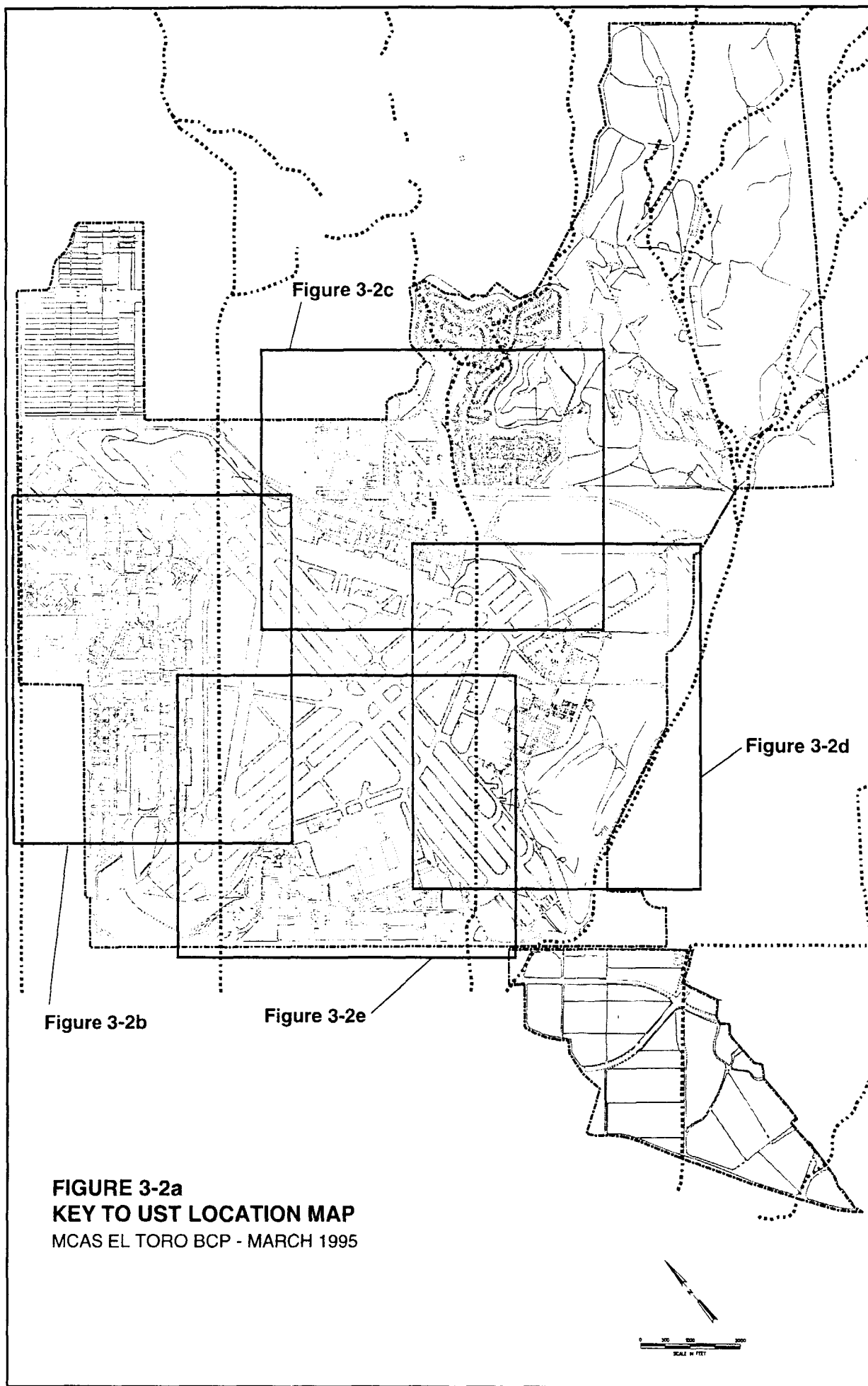
Vegetative Cover Type/Feature	Acres
Venturan-Diegan transitional coastal sage scrub	118.1
California sagebrush-California buckwheat scrub	42.6
Black sage scrub	2.4
Sagebrush scrub	163.5
Sagebrush-Black sage scrub	40.0
Bush mallow sage scrub	10.4
Southern cactus scrub	23.2
Sage scrub-Grassland ecotone	43.3
Annual grassland	208.3
Southern coastal needlegrass grassland	87.2
Ruderal	37.9
Freshwater swale	1.0
Southern willow scrub	30.6
Mulefat scrub	5.3
Southern sycamore riparian woodland	0.6
Coast live oak woodland	0.9
Mexican elderberry woodland	2.4
Open water	2.2
Ephemeral drainages and washes	0.4
Vineyards and orchards	44.8
Urban	107.4
Non-urban commercial/industrial/institutional	3.3
Parks and ornamental plantings	4.7
Other developed areas	1.8
Cleared or graded	228.9
TOTAL ACREAGE OF NATURAL AREA:	1211.2
Source: Dames & Moore, 1994.	

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Table 3-16 Special-Status Wildlife Species at MCAS El Toro MCAS El Toro BCP - March 1995	
Species	Status
AMPHIBIANS/REPTILES	
Coastal Western Whiptail	Federal Category 2 Candidate
Orange-throated Whiptail	Federal Category 2 Candidate California Species of Special Concern
San Diego Coast Horned Lizard	Federal Category 2 Candidate California Species of Special Concern
Western Spadefoot Toad	California Species of Special Concern
BIRDS	
Bell's Sage Sparrow	Federal Category 2 Candidate California Species of Special Concern
Black-shouldered Kite	California Fully Protected
California Gnatcatcher	Federal Category 2 Candidate California Species of Special Concern
Cooper's Hawk	California Species of Special Concern
Ferruginous Hawk	Federal Category 2 Candidate California Species of Special Concern
Loggerhead Shrike	Federal Category 2 Candidate California Species of Special Concern
Osprey	California Species of Special Concern
Prairie Falcon	California Species of Special Concern
San Diego Cactus Wren	Federal Category 2 Candidate California Species of Special Concern
Sharp-shinned Hawk	California Species of Special Concern
Southern California Rufous-Crowned Sparrow	Federal Category 2 Candidate California Species of Special Concern
MAMMALS	
Northwestern San Diego Pocket Mouse	Federal Category 2 Candidate California Species of Special Concern
San Diego Black-tailed Jackrabbit	Federal Category 2 Candidate California Species of Special Concern
San Diego Desert Woodrat	Federal Category 2 Candidate California Species of Special Concern
Southern Grasshopper Mouse	Federal Category 2 Candidate California Species of Special Concern
Source: Dames & Moore, 1994.	

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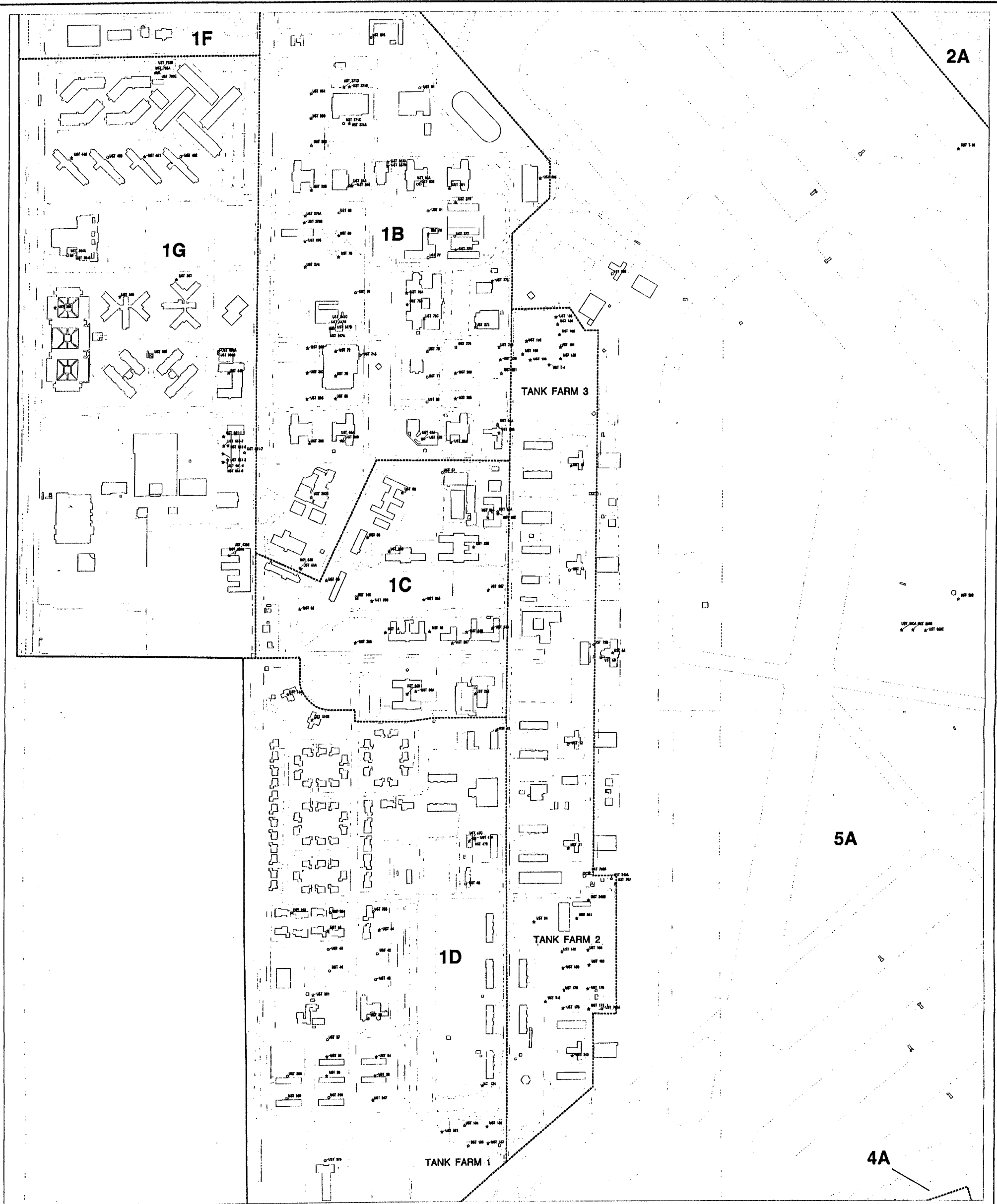


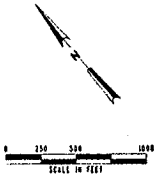
FIGURE 3-2b
UST LOCATIONS

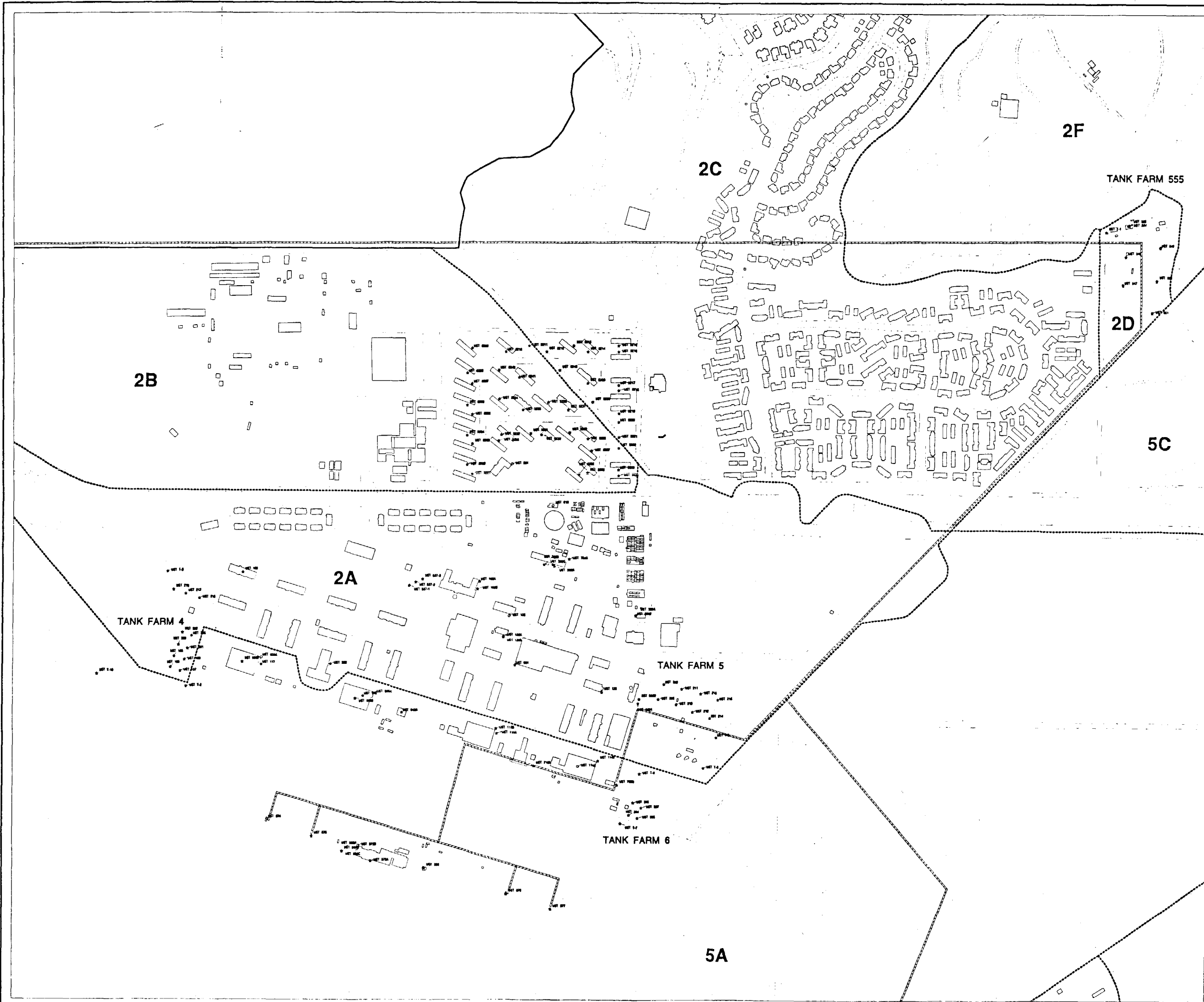
MCAS EL TORO BCP
03 MARCH 95

- FEATURES:**
- BUILDING OR PAD
 - ROAD OR AIRFIELD
 - WASH OR STREAM
 - FUEL LINE
 - MCAS BOUNDARY
 - ZONE OR PARCEL BOUNDARY

- ABOVE CALIFORNIA LEAKING UNDERGROUND FUEL TANK LEVELS
- BELOW CALIFORNIA LEAKING UNDERGROUND FUEL TANK LEVELS
- UNEVALUATED OR ADDITIONAL INVESTIGATION REQUIRED

NOTES:
THE NUMBER PORTION OF THE PARCEL IDENTIFIER REPRESENTS THE ZONE NUMBER THAT THE PARCEL IS LOCATED WITHIN.





FEATURES:

- BUILDING OR PAD
- ROAD OR AIRFIELD
- WASH OR STREAM
- FUEL LINE
- MCAS BOUNDARY
- ZONE OR PARCEL BOUNDARY

- ABOVE CALIFORNIA LEAKING UNDERGROUND FUEL TANK LEVELS
- BELOW CALIFORNIA LEAKING UNDERGROUND FUEL TANK LEVELS
- UNEVALUATED OR ADDITIONAL INVESTIGATION REQUIRED

NOTES:

THE NUMBER PORTION OF THE PARCEL IDENTIFIER REPRESENTS THE ZONE NUMBER THAT THE PARCEL IS LOCATED WITHIN.

FIGURE 3-2c
UST LOCATIONS

MCAS EL TORO BCP
03 MARCH 95

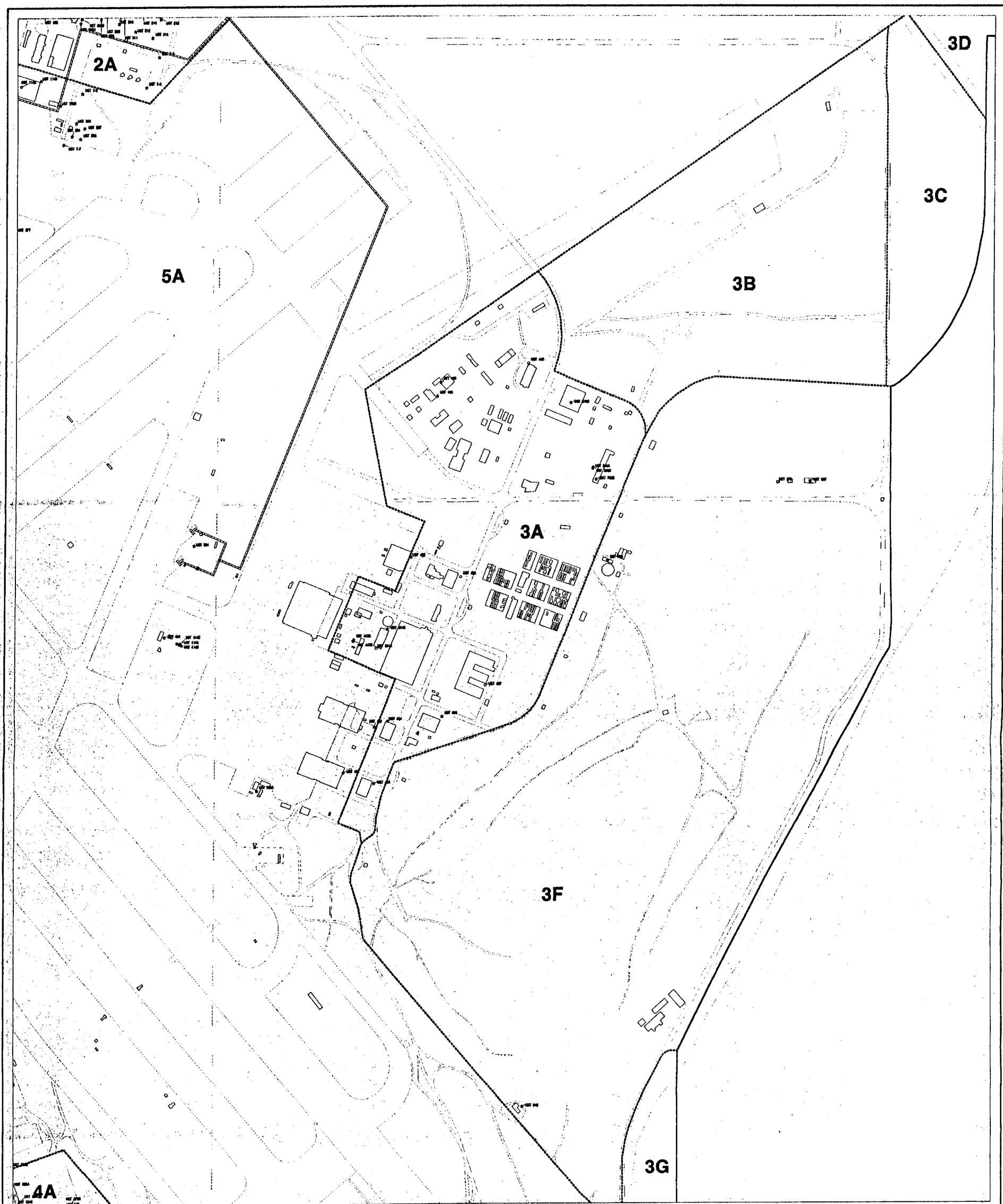


FIGURE 3-2d
UST LOCATIONS

MCAS EL TORO BCP
03 MARCH 95

FEATURES:

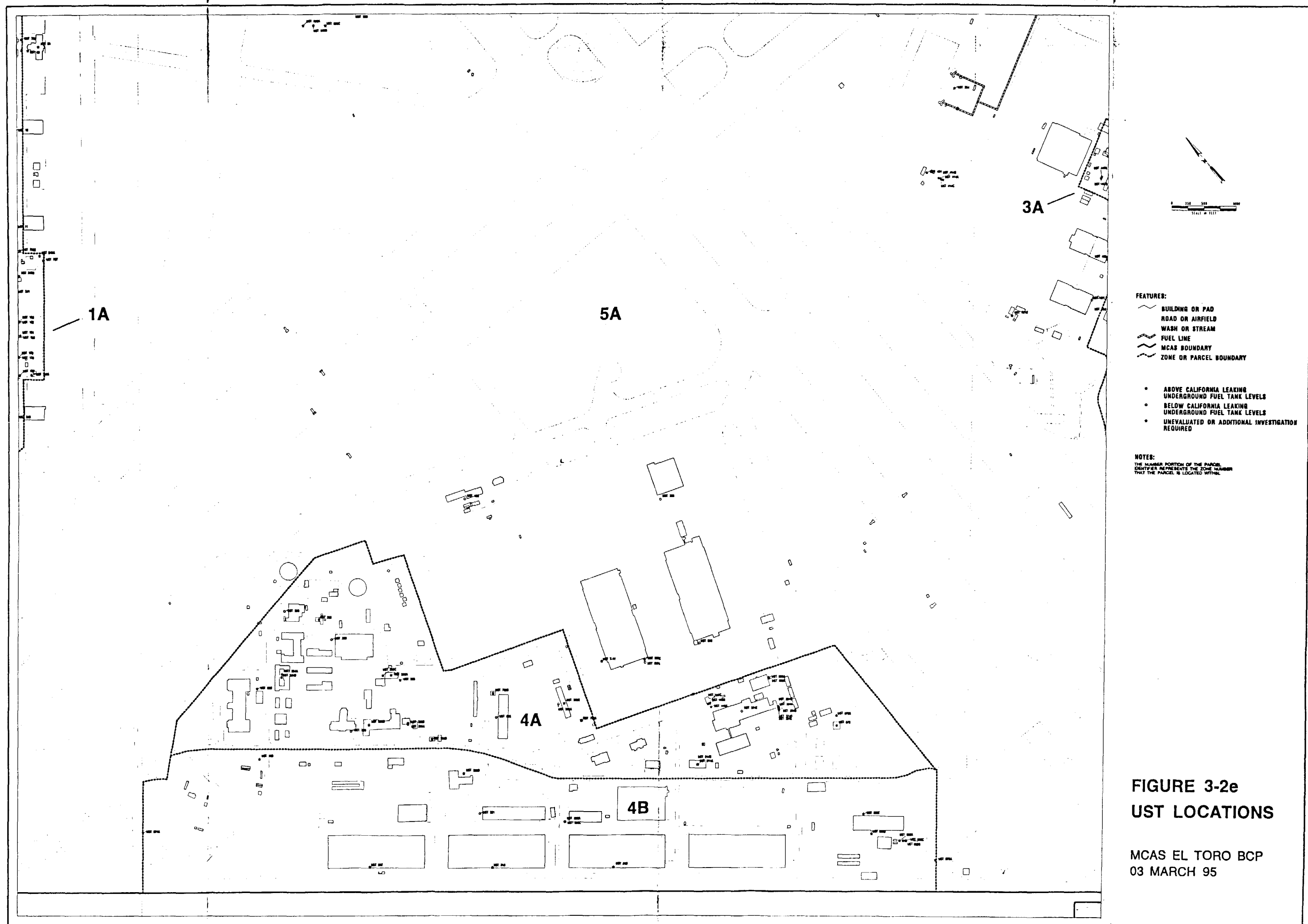
- BUILDING OR PAD
- ROAD OR AIRFIELD
- WASH OR STREAM
- FUEL LINE
- MCAS BOUNDARY
- ZONE OR PARCEL BOUNDARY

- * ABOVE CALIFORNIA LEAKING UNDERGROUND FUEL TANK LEVELS
- BELOW CALIFORNIA LEAKING UNDERGROUND FUEL TANK LEVELS
- * UNEVALUATED OR ADDITIONAL INVESTIGATION REQUIRED

NOTES:

THE NUMBER PORTION OF THE PARCEL IDENTIFIER REPRESENTS THE ZONE NUMBER THAT THE PARCEL IS LOCATED WITHIN.

0 100 200 300
SCALE IN FEET



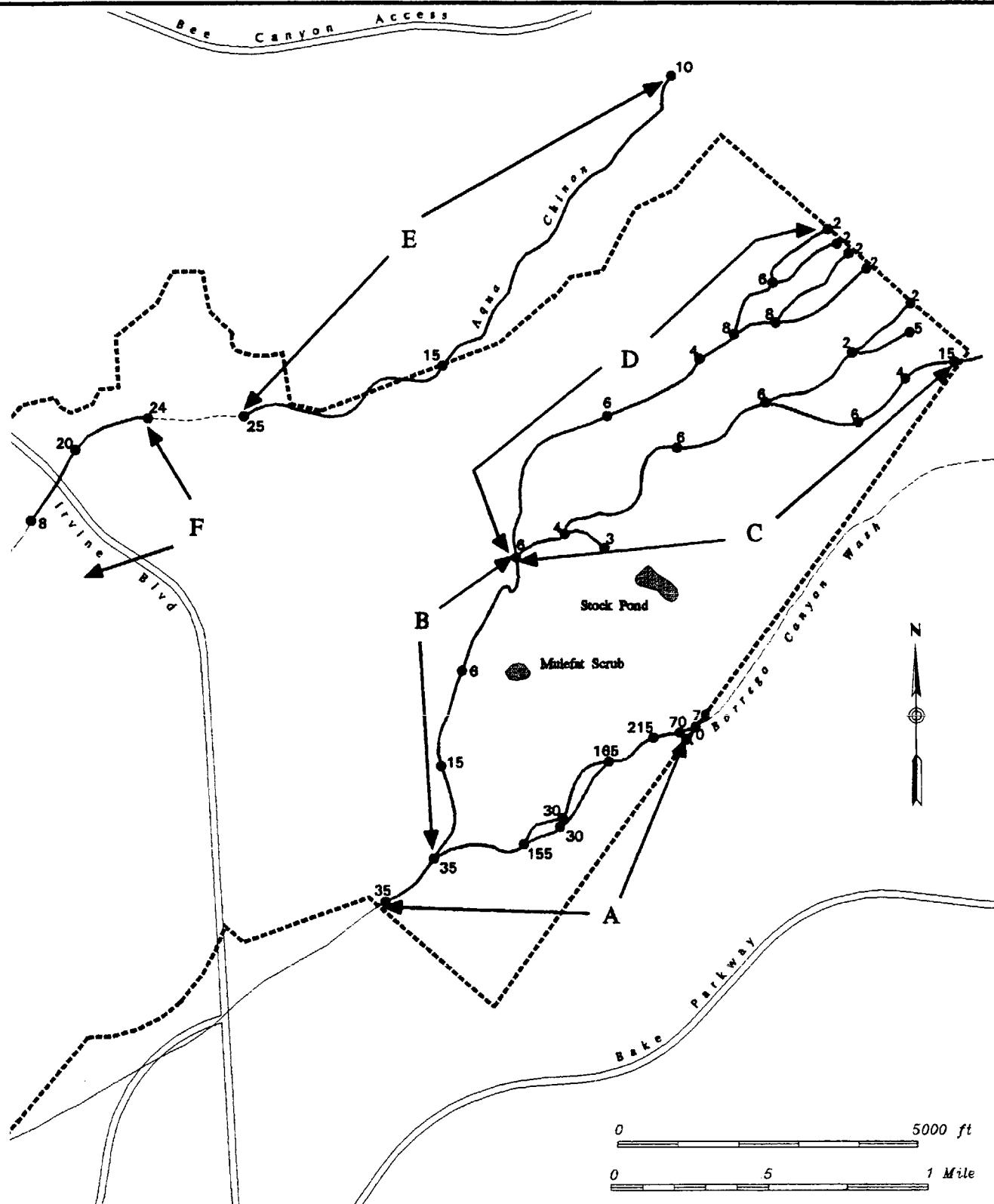


- | | |
|-----------------------|-----------------------------|
| coastal sage scrub | Mexican elderberry woodland |
| southern cactus scrub | agriculture/orchards |
| riparian scrub | developed/disturbed areas |
| annual grassland | open water |
| native grassland | |

FIGURE 3-3a
VEGETATION COMMUNITIES
IN NATURAL AREA

MCAS EL TORO BCP – MARCH 1995

Source: Dames and Moore, 1994.



----- underground channel
 ————— lined channel
 - . - . - unlined channel
 [shaded box] wetlands
 ● 5 channel width in feet

FIGURE 3-3b
WETLANDS AND WATERS
IN NATURAL AREA

MCAS EL TORO BCP – MARCH 1995

Source: Dames & Moore, 1994.

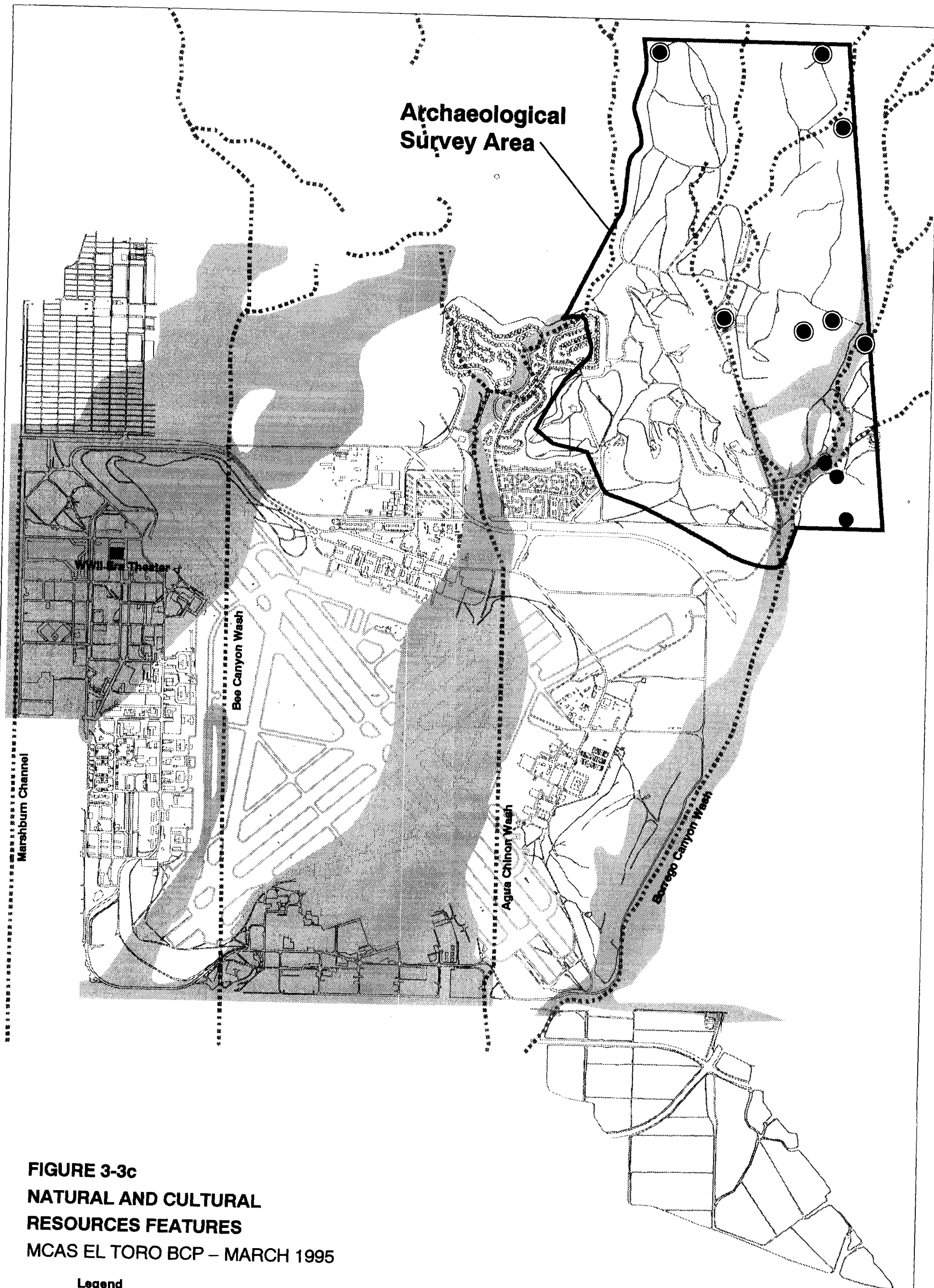
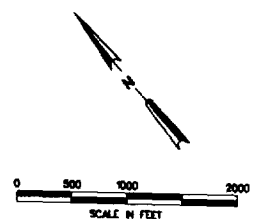


FIGURE 3-3c
NATURAL AND CULTURAL
RESOURCES FEATURES
 MCAS EL TORO BCP – MARCH 1995

Legend

- Archaeological Sites
- Archaeological Sites Recommended for Further Evaluation for Eligibility for Nomination to the National Register of Historic Places
- 100-Year Floodplain





Chapter 4

Installation-Wide Strategy For Environmental Restoration

This chapter summarizes the strategies for environmental restoration and compliance programs at MCAS El Toro based on currently available information. Closure of the Station is scheduled for July 1999 and, therefore, environmental restoration and compliance strategies will shift from supporting an active Component mission to preparing for disposal and reuse of MCAS El Toro property.

4.1 ZONE/OPERABLE UNIT DESIGNATION AND STRATEGY

The following sections discuss zones identified for the BCP and existing IRP OUs and sites. According to the BCP guidance, zones may be identified to create geographically contiguous areas that are amenable to management as single investigative units. The zones for MCAS El Toro have been created by the BCT and Project Team based on geographic considerations, mission activities, and parcel disposal considerations. Current IRP OUs have been defined primarily by the type of IRP sites (such as potential source areas for the VOC contamination in groundwater) rather than by geographic locations. The current zone designations, therefore, do not have a significant correlation with the IRP OUs. However, BCP zones have been defined to reduce or eliminate splitting of individual IRP sites.

4.1.1 Zone Designations

For the purposes of this BCP, MCAS El Toro was divided into five geographically contiguous zones. Each of the five zones was subdivided into parcels with a varying number of parcels per zone.

Chapter 4 **Installation-Wide Strategy For Environmental Restoration**

These parcels correspond to the possible reuse parcels (based on existing land use) as discussed in Subsection 2.1. In the absence of a reuse plan, parcelization was based on current land use at MCAS El Toro. Zone and parcel divisions for the Station are shown in Figure 3-1. A description of each zone is provided below.

- o Zone 1 consists of the northwest quadrant of the Station and contains administrative services, the Station headquarters, family and bachelor housing, and community support services. IRP Sites 13, 14, 15, and 20 are located in Zone 1.
- o Zone 2 consists of the northeast quadrant of the Station. Zone 2 houses activities of the Marine Aircraft Group (including training, maintenance, supply and storage, and airfield operations), additional family housing and community services, as well as an open area surrounding and including the EOD range. IRP Sites 1, 3, and 4 are located in Zone 2. This zone also contains approximately 90 percent of the natural habitat remaining at the Station.
- o Zone 3 comprises the southeast section of the Station where additional administrative and maintenance services are located. The Station Golf Course is also located in this zone. IRP Site 5 is located in Zone 3.
- o Zone 4 is the southwest area of the Station. This zone primarily houses maintenance, supply, storage services, and small portions of the southern flight corridor. IRP Sites 8, 11, 12, 21, and portions of 24 are located in Zone 4.

- o Zone 5 incorporates all areas necessary to maintain airfield operations. This includes active runways and taxiways, the entire aircraft parking apron, and all takeoff and approach flight corridors. IRP Sites 2, 6, 7, 9, 10, 16, 17, 19, 22 and portions of 24 are located within Zone 5.

Parcels within each zone were delineated according to current land use at the Station. Also, the boundaries for each parcel were drawn such that division of IRP sites between parcels was minimized. Site 24 (Possible VOC Source Area) encompasses most of the southwest quadrant of the Station and, therefore, was divided between parcels 5A, 4A, and 4B. Site 25 (Major Drainages) consists of the four drainage channels that traverse or border the Station and, therefore, was divided between numerous parcels. In addition, parcel boundaries were established so as to minimize the division of LOCs. LOCs are defined as locations of environmental concern (e.g., IRP sites, USTs, RFA SWMUs/AOCs, etc.).

4.1.2 Operable Unit Designations

The zones and parcels identified in Subsection 4.1.1 do not correspond to the OUs established for the IRP sites. The relationship between IRP sites, OUs, and parcels is shown in Table 4-1a (Relationship Between IRP Sites, OUs, and Parcels). Based on meetings of the BCT held in January 1995, the OUs for the Station are defined as follows:

- o OU-1 addresses the groundwater on- and off-Station that is contaminated with constituents that have migrated from sites at MCAS El Toro.

- o OU-2 includes the sites that are considered to be the potential VOC source areas for the Station. This OU has been subdivided as follows:
 - OU-2A includes Site 24 (Potential VOC Source Area) and Site 25 (Major Drainages).
 - OU-2B includes two of the Station's landfills: Site 2 (Magazine Road Landfill) and Site 17 (Communication Station Landfill).
 - OU-2C includes Site 3 (Original Landfill) and Site 5 (Perimeter Road Landfill).
- o OU-3 sites include all other IRP sites not addressed in the other OUs 1 and 2. The sites were primarily established under the IRP prior to the listing of MCAS El Toro on the NPL, and do not necessarily relate to the regional VOC contamination in groundwater. There are currently 17 sites classified in the main OU-3. OU-3 has been subdivided into OU-3A and OU-3B. Early actions (i.e., preparation of EE/CAs for early removal actions) will be performed at Sites 4 and 13, which comprise OU-3B. The remaining 15 sites will be addressed in OU-3A.

As new data become available, the OU definitions may be re-evaluated and refined to better suit restoration strategies that expedite base reuse and disposal. The OU definitions can be modified at any time by agreement among the parties to the FFA.

4.1.3 Sequence of Operable Units

The schedules for OU-1, OU-2A, OU-2B, and OU-3B at MCAS El Toro were revised in January 1995. The current schedules for the OUs are also discussed in Chapters 3 and 5. The current OU sequencing is as follows:

- 1) OU-1 will be the first OU to come to a ROD. Currently, the FS is being prepared for OU-1 and the ROD is scheduled to be completed in December 1995. Remediation of the VOC-contaminated groundwater will continue beyond closure of the Station, which is scheduled for July 1999.
- 2) OU-3B sites, Site 4 and Site 13, will be addressed with early removal actions and will not be included in the Phase II RI process. EE/CAs will be prepared for these sites and it is anticipated that removal actions will be completed by late 1996.
- 3) OU-2A and OU-2B will be further investigated in a Phase II RI that is scheduled to begin in mid-1995. The Draft Phase II RI Reports for OU-2A and OU-2B are scheduled for completion in late 1995 and early 1996, respectively. RODs for these OUs are scheduled to be completed by mid-1997. The schedules for these OUs have been set up such that the FS Report, Proposed Plan, and ROD for OU-2A are completed approximately three months ahead of the documentation for OU-2B.

Currently, the schedules for OU-2C and OU-3A are being negotiated by the parties to the FFA. The schedules are anticipated to be resolved in 1995.

As additional information on OU sequencing becomes available, the BCP will be updated.

4.1.4 Early Actions Strategy

A list of planned early actions related to the IRP at MCAS El Toro is presented in Table 4-2 (Environmental Restoration Planned Early Action). The table presents the site number, the parcel in which the site is located, and a description of the action and unit involved in the early action. The early actions are prioritized from highest (A) to lowest (C), with the action at A priority sites planned for implementation in 1995. The implementation dates for sites with B and C priorities have not yet been determined.

Several new early action strategies for IRP sites have been developed. To expedite the cleanup process at several IRP sites where the nature and extent of contamination appears to be (1) fairly well characterized by Phase I RI data, and (2) amenable to a removal action, early actions are planned. These early actions will be addressed with EE/CAs, which, after implementation of the removal actions, are anticipated to bring sites to the no further remedial action planned (NFRAP) stage. This approach is currently being taken at one or more units at Sites 4 and 13, and will be taken at Sites 7, 11, 14, 19, 20, and 25.

4.1.5 Remedy Selection Approach

Remedies will be selected in accordance with statutory and NCP criteria. The MCAS El Toro Project Team will involve all parties who have an impact on the remedies selected at the Station in the remedy selection process. During the evaluation of alternatives, particular attention will be given to the following issues:

- o Applicable or Relevant and Appropriate Requirements (ARARs)
- o Land use/risk assessment
- o Base-wide treatment facilities
- o Applicable remedies
- o Petroleum, oils, and lubricants (POLs)
- o Future land use
- o Reduction of risk for human and ecological receptors
- o Cost-effectiveness
- o Use of presumptive remedies as applicable

In addition, during the remedy selection process, the Project Team will consult the following documents prepared by the California Base Closure Environmental Committee (CBCEC):

- o Innovative/Emerging Treatment Technologies, Draft Version, February 1994.
- o Treatment Technologies Applications Matrix for Base Closure Activities, November 1993.

4.1.6 Installation-Wide Source Discovery and Assessment Strategy

Additional locations of potential environmental concern at MCAS El Toro have been identified in the draft version of the EBS Report. These locations include the features identified from aerial photographs and interviews with current and past Station employees. The locations identified need to be further evaluated to determine if they present an environmental concern that would affect property transfer. Revisions of the BCP will track the status and strategies for evaluating and taking action at these newly identified locations of potential environmental concern, as appropriate.

4.2 COMPLIANCE STRATEGY

This subsection presents a discussion of strategies for compliance programs at the Station. Table 4-3 (Environmental Compliance Planned Early Action) presents a list of potential early actions related to compliance programs. The LOCs for early action include USTs, OWSs, and some SWMUs/AOCs that were recommended for further action in the RFA performed at the Station.

4.2.1 Storage Tanks

Underground Storage Tanks. A total of 406 USTs have been identified at the Station. This total includes 83 active, 161 inactive, 158 removed or abandoned tanks, and 4 UST locations with an unknown status. Of the 161 inactive tanks, the UST Tiger Team has identified 70 USTs to be removed during 1995. The remaining USTs will be removed in 1996.

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Of the 158 removed tank locations, 10 locations are recommended for immediate closure, 20 locations are recommended for further investigation, 13 locations require remedial actions, and 8 UST locations were considered closed during the Irvine Boulevard Relocation project in 1990. The status of the remaining 107 USTs is pending.

The Tiger Team will continue to meet on a regular basis and focus on UST compliance issues and removal of nonessential USTs.

For the purpose of generating conservative cost estimates for base closure, it is assumed that all of the USTs will eventually need to be removed from the Station for the following reasons:

- o Some reuse scenarios (with the exception of reuse as an airport) might not require the USTs.
- o If USTs are needed in the future by a reuse scenario for the property, new double-walled USTs would eventually need to be installed.

Prior to base closure and eventual removal of all USTs, various USTs that are essential to Station operations will need to remain active and will, therefore, need to be monitored according to requirements of OCHCA.

Interim Strategy for UST Management

Until the UST Tiger Team is fully operational and a more formalized approach for UST management is developed, the following interim

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strategy will be used for planning work associated with USTs at this time:

Active USTs. All currently active USTs are assumed to be essential to base operations, and as such, are assumed to remain active until July 1999.

- o Prior to 1999, these USTs will need to be properly monitored per the requirements of OCHCA. Nonintrusive testing may also be conducted at active USTs to assess the possibility of a release at these USTs. Testing, such as soil gas surveys and/or tank integrity tests, may be considered at these USTs. The Tiger Team will provide recommendations for the compliance monitoring and any nonintrusive testing that may be done at USTs planned for continued use until 1999.
- o After 1999, the active USTs will need to be removed.

Inactive USTs. All inactive USTs, including those previously abandoned in place with sand, will need to be removed prior to July 1999.

Assumptions on UST Leakage

Until all of the USTs are actually removed, the Station will not know how many have leaked, and how many USTs will need to have some sort of remedial action for cleanup of contamination.

Based on knowledge of similar facilities, it is anticipated that remediation will be required at a substantial number of USTs with past

(or current) leakage from the tank and/or its associated piping. Since the actual percentage of leaking USTs and the actual extent of the leakage will not be known until after the removals have occurred, some initial assumptions have been made by the BCT:

Percent of USTs with leakage. It is assumed that 60 percent of the existing USTs requiring removal will have leaked and contaminated the subsurface soil. These USTs will require some form of remedial action.

Percent of USTs with shallow and deep soil contamination. For the 60 percent of USTs that have leaked, it is assumed that half of these will have resulted in shallow contamination (i.e., less than 20 feet deep) that can be remediated by excavation and offsite treatment/disposal, and half will have resulted in deep contamination (greater than 20 feet deep) that will require in-situ remediation. Thus, 30 percent of the USTs awaiting removal are assumed to have shallow contamination, and 30 percent are assumed to have deep contamination.

Remedial action assumed for USTs with deep contamination. Of the USTs with deep contamination, it is assumed that SVE and in-situ bioremediation will be used to clean up contaminated soil. It is assumed that these USTs (30 percent of the total) split to 15 percent SVE and 15 percent bioremediation.

Percent of USTs with potential groundwater contamination. It is assumed that 5 percent of the USTs have leaked sufficient quantities of hydrocarbons to have impacted groundwater at the Station. For these, a groundwater remediation program is assumed to be required.

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Schedule Assumptions

A closure date of July 1999 is targeted for the Station. Since significant remedial actions will be associated with the leaking USTs, the schedule for overall UST work at the Station must include significant time for both the removal of USTs, as well as for the remediation effort required for the leaking USTs.

Inactive USTs. There are 161 inactive USTs at the Station that are planned for removal. Of these, 70 USTs are scheduled for removal in 1995 and the remaining USTs will be removed in 1996.

Active USTs. There are 83 active USTs at the Station that are considered essential for base operations through the closure date of July 1999. The Tiger Team will provide a plan for monitoring these USTs while they are still active up to the closure date. To assess the possibility of a release from these USTs prior to July 1999, some nonintrusive testing (soil gas survey and/or tank integrity testing) may be performed.

Prioritizing/Scheduling of USTs for Early Removal

As in the past, UST removals at the Station will be performed in clusters. To perform the work in the most effective way, USTs will need to be prioritized to assess which ones should be done first and which can potentially wait toward the end of the scheduled removals. The Tiger Team will provide a plan prioritizing USTs for removal. Some of the factors to be considered in selecting USTs for early removal are the following:

- o USTs with evidence of a release
- o USTs at the Tank Farms (i.e., large capacity, extremely old tanks, many as much as 50 years old) have a high likelihood of leakage, and should be given priority for early evaluation in the sequencing of the work. Since these are likely to be essential for Station operations and would not necessarily be candidates for early removal, early evaluation of these USTs for leakage by nonintrusive testing (soil gas survey and/or tank integrity tests) may need to be considered. Other large, old USTs should also be identified for potential early removal or evaluation.
- o As a key part of the base closure, sequencing of USTs for removal must also be evaluated with respect to parcels that could potentially be transferred to lease or deed quickly.

Aboveground Storage Tanks. A total of 14 ASTs have been identified at the Station. The Tiger Team will conduct an inventory of the ASTs, along with an assessment of the current and anticipated future need for these ASTs. The Tiger Team will provide a recommendation for management of ASTs with regard to current regulations and base closure requirements.

Fuel supply pipelines. A system of underground fuel supply pipelines transfers fuel from large-capacity JP-5 USTs in Tank Farm 555 to various refueling points within the Station. These pipelines are considered essential to Station operations and are planned to be removed after 1999. In the interim, some nonintrusive testing (such as a soil gas survey) may be considered to evaluate the pipeline network

prior to its planned removal. The Tiger Team will provide strategies for the fuel supply lines.

4.2.2 Hazardous Materials/Waste Management

The Station operated a RCRA-permitted storage facility at Building 673-T3 until August 1994. On 21 December 1994, the Station notified DTSC that waste storage at this building had ceased and closure would be performed. On 17 January 1995, DTSC issued a closure extension letter indicating that the closure of the storage facility must be completed by 14 September 1995. According to the closure schedule for the former storage facility, steam-cleaning and sample collection will be performed in mid-1995. The closure report will be completed in September 1995, within the 180-day time limit.

Because the Station RCRA-permitted facility is inactive and in the process of closure, on-Station storage of hazardous waste is limited to less than 90 days. The Station's paved and bermed less than 90-day accumulation areas will be phased out as the current tenants begin to leave the Station. The EO's accumulation area at Building 900, which receives hazardous waste containers from tenant accumulation areas, will remain operational until hazardous waste is no longer generated by the Station. Similarly, storage of waste oil at Building 326 and waste JP-5 at AST 862 will continue until these wastes are no longer generated by the Station.

Because spills may occur at the Station's accumulation areas during day-to-day activities, any residual contamination at these accumulation areas will be addressed as part of base closure. Onsite visual

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inspections of the active accumulation areas are currently being performed and will be completed in 1995.

From August to November 1991, various hazardous wastes generated overseas during Desert Storm were stored at an area located east of DRMO Storage Yard No. 3. The containers were stored atop plastic sheeting on unpaved ground. Although no releases at this area were reported, a visual inspection should be performed to survey the area for evidence of releases.

Pesticides are currently stored at Building 753. In the past, pesticides were stored at Buildings 493 and 687, and, prior to 1959, at the location currently occupied by Building 464. These locations should be visually inspected. These inspections will dictate whether further investigations are needed.

4.2.3 Solid Waste Management

Current solid waste management practices (i.e., offsite disposal of Station's solid waste) will continue until final base closure. No landfills on the Station are currently active. Some consolidation of waste may occur in the future as part of base closure. Remedial action for the existing landfills on-Station will be addressed in the IRP. Soil from IRP sites may be used as a cover for a landfill as part of closure.

4.2.4 Polychlorinated Biphenyls

Overall management of PCBs at the Station will be conducted in accordance with the MCAS El Toro PCB Management Plan (SAIC,

1994). A description of specific issues pertaining to the current status of PCBs at the Station is provided below.

PCB Transformers. According to EPA, the presence of operating PCB transformers does not necessarily preclude the transfer of Station property, and the presence of such transformers only affects property transfer if a release has occurred. In late 1994, a PCB transformer survey was performed at the Station. Of the 115 transformer locations identified at the Station, releases have been identified at only two locations:

- o At Building 371 (transformer PCBT56), a possible dielectric fluid release was identified. This release needs to be further evaluated to determine if PCBs have been released from the transformer.
- o At transformer PCBT74, a past release is known to have occurred, which was investigated in the RFA (SWMU/AOC 244). Further investigation will be performed at this location.

During the survey, the pole-mounted transformers could not be closely inspected and, therefore, transformer identification numbers could not be verified. Additional inspections of these transformers using appropriate equipment (e.g., scissor-lift) should be conducted to obtain the serial numbers and verify that pole-mounted transformers at the Station do not contain PCBs.

PCB Storage Areas. Some PCB storage areas identified at the Station that have been or may need to be evaluated include:

- o SWMU/AOC 7 (Transformer Storage Area) was evaluated in the RFA and recommended for no further action based on data from a sampling visit. Per direction from DTSC, this area will need to be further investigated; the investigation is scheduled to be performed in mid-1995.
- o Site 11 (Transformer Storage Area) is a PCB release site that is currently being evaluated in the IRP.
- o A storage area adjacent to Tank 175 currently stores non-PCB-containing transformers. One PCB transformer was identified by Station personnel as having been stored in this area. No release of PCBs from this single transformer is believed to have occurred. A site inspection of this area may be performed to survey the area for evidence of releases.
- o In 1993, a storage area for PCB equipment was identified at Building 324. This area was not inspected or evaluated as part of the RFA. At a minimum, this storage area may need to be inspected. The inspection will dictate whether further investigation is needed.

Nontransformer PCB Items. Some light fixtures in buildings at the Station may contain ballasts containing PCBs. Action for buildings with PCB-containing light fixtures will depend on whether a building is planned for demolition. If a building with such fixtures is scheduled to be demolished, proper demolition and disposal activities for the PCB-ballasts will need to be performed. At buildings not planned for demolition, PCBs will be managed in-place. When a building with

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known PCB items present is transferred, the Navy will disclose available information related to PCB items.

4.2.5 Asbestos

MCAS El Toro will continue to manage ACM according to DOD policy that is outlined in the letter dated 02 November 1994. Additional base-wide asbestos surveys will not be conducted on-Station. Building-specific surveys for ACM may be conducted at buildings/facilities that are scheduled for demolition or other activities that may disturb any ACM.

Property containing ACM may be conveyed, leased, or otherwise disposed of unless it is determined that the ACM is not in compliance with applicable laws, regulations, and standards, or if it poses a threat to human health at the time of transfer. If the ACM is not in compliance with applicable laws and regulations or poses a threat, the ACM will be remediated prior to property disposal. The above mentioned remediation is not required in the following instances:

- o The building is scheduled for demolition by the transferee
- o The transfer document prohibits occupation of the building prior to the demolition
- o The transferee assumes responsibility for the management of any ACM in accordance with applicable laws.

4.2.6 Radon

A radon survey was conducted for the Station hospital, child care center, and housing units in 1991. The results of the survey indicated that none of these facilities or housing units exceeded the radon threshold value of 4 pCi/L. Thus, no mitigative action or further testing is recommended for these areas of the Station. In addition, it is anticipated that the radon levels in other buildings at the Station should not be significantly different from those that were surveyed.

When MCAS El Toro property is transferred, it is DOD policy to include in the property transfer documents any available and relevant radon assessment data. Therefore, the results of the radon survey at the Station should be included in future property transfer documents.

It should be noted that radium paint has been used in the past in Building 296. Waste associated with radium paint use in this building may have been disposed of in one of the Station's landfills. The radon survey did not include Building 296.

4.2.7 RCRA Facilities (SWMUs)

Further action will be performed for various SWMUs/AOCs investigated in the RFA. A summary of these SWMUs/AOCs planned for further action is as follows:

- o Twenty-five (25) SWMUs/AOCs were recommended for further action in the RFA:

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- Two SWMUs/AOCs (numbers 194 and 300) have been included in IRP Site 3 (Original Landfill) and will be further investigated in the Phase II RI for this site.
- Five SWMUs/AOCs (numbers 39, 46, 88, 131, and 171) will have additional field sampling performed in an extension of the RFA. This additional investigation will be conducted by the Navy's CLEAN II contractor and is planned to be performed concurrent with the Phase II RI scheduled to begin in mid-1995.
- Five UST locations (SWMUs/AOCs 145, 175, 176, 280, and 298) will be further evaluated in the UST compliance program.
- Four OWS locations (SWMUs/AOCs 84, 151, 173, and 199) will be further evaluated in the OWS compliance program. These OWSs are planned for removal.
- Five vehicle washracks (SWMUs/AOCs 110, 198, 201, 204, and 213) and one drop tank storage area (SWMU/AOC 14) were recommended for repair or replacement of cracked pavement. (SWMU/AOC 260 was also recommended to have pavement repaired; additional sampling will be performed at this SWMU/AOC in response to DTSC comments on the RFA.) This repair effort should either be implemented soon, or a decision made to close these washracks early in the base closure process.

- Two less than 90-day storage areas (SWMUs/AOCs 26 and 33) were recommended to have stained soil removed. This action, if not yet completed, should be implemented soon.
- o At the request of the DTSC, additional sampling will be performed at five SWMUs/AOCs (numbers 7, 9, 244, 260, and 264), which were not recommended for further investigation in the RFA. This additional investigation will be conducted by the Navy's CLEAN II contractor and is planned to be performed concurrent with the Phase II RI scheduled to begin in mid-1995.

4.2.8 NPDES Permits

The Station will comply with the conditions established in the NPDES Permit while base closure is in progress and Station activities still contribute to the discharge points in the permit. When transfer of Station property is complete, the permit will be transferred or terminated.

4.2.9 Oil/Water Separators

Three aboveground OWSs are scheduled to be constructed during 1995. Two of these OWSs will be installed at the downstream end of Bee Canyon Wash and Agua Chinon Wash. The third OWS is scheduled to be installed at Building 658, Engine Test Cell.

In order to remain in compliance with the Station's NPDES Permit, the Station's AC/S Installations Department will continue with repair and cleanup activities of existing OWSs.

OWSs will be prioritized for removal in a similar manner as USTs (See Subsection 4.2.1). Current plans for OWSs at the Station include the following:

Active OWSs. All currently active OWSs are assumed to be essential to base operations, and as such, are assumed to be required until July 1999 for the Station to retain its discharge permit with the RWQCB. After 1999, these OWSs may need to be removed.

Inactive OWSs. All inactive OWSs will be removed prior to July 1999.

4.2.10 Silver Recovery Units

Silver recovery units are located at the Station's photograph laboratory (Building 443) and medical clinic (Building 439). These treatment units are regulated in the same manner as OWSs under PBR regulations. It is planned that these treatment units will be operated until base closure. When the treatment units are removed, they will be closed under CCR Title 22 requirements.

The Station's photograph laboratory silver recovery unit was formerly located in Building 312. This location should be visited and inspected for evidence of releases from the former treatment unit. The inspection will dictate whether further investigation is needed.

4.2.11 Lead-Based Paint

Management and/or remedial actions for buildings containing LBP will be conducted in accordance with DOD and/or Navy policies described

in Subsection 3.2.11. For residential buildings with LBP, actions will depend on the year the housing was constructed and/or whether the housing is planned for reuse or for demolition. For nonresidential buildings, actions will be depend on the physical condition of the LBP and potential reuse of the building.

Final results of the LBP survey being conducted at family housing and related areas are expected to be available in mid-1995. Additional base-wide LBP surveys are not expected to be conducted at the Station; however, site specific surveys may be conducted on an as-needed basis.

4.2.12 Air

The Station will continue to comply with current air quality regulations during base closure activities. In addition, remedial actions taken at the Station will comply with appropriate rules from SCAQMD regarding emissions. ARARs regarding potential air quality impacts during remedial activities will be evaluated on a case-by-case basis during the planning/evaluation phase of remediation projects.

4.3 NATURAL AND CULTURAL RESOURCES STRATEGIES

Strategies for natural and cultural resources at MCAS El Toro are described below:

Archaeological resources. In 1987, the COE identified seven sites as possibly being eligible for listing on the national Historic Register. No further action is anticipated on the part of the USMC. If reuse planning

identifies possible impacts to these sites, the ultimate land owner will need to complete the requirements of Section 106 of the National Historic Preservation Act.

Historic structures and resources. A survey of historic structures at MCAS El Toro has been completed by COE. This survey identified only the theater as possibly being eligible for listing on the National Historic Register. A determination of eligibility for this building will need to be completed as part of the closure EIS.

Threatened and endangered species. Annual surveys of threatened and endangered species will need to be conducted until the point of base closure in 1999 since the list of threatened and endangered species changes with time and the species residing within the Station may also change with time. At this time, several threatened and endangered species, including the California Gnatcatcher, are known to exist in significant numbers on-Station. A conservation plan for the natural area at the Station will be completed in March 1995.

Surface water and wetlands. A survey of surface water and wetlands will be completed for the natural area at the Station in March 1995. Further investigations of the remainder of the Station will be completed as part of the reuse EIS.

Paleontological resources. A survey of prehistoric and paleontological resources is not currently required. The area surrounding MCAS El Toro is known for its rich paleontological resources, so it is anticipated that reuse construction within the Station may require a preservation plan.

4.4 COMMUNITY INVOLVEMENT STRATEGY

The CRP, originally issued in 1991, provides a strategy for communication between MCAS El Toro, including the BCT, and the various parties interested in activities relating to the IRP at MCAS El Toro. These interested parties include federal, state, and local agencies and elected officials; special interest and environmental groups; public officials; and members of the general public.

MCAS El Toro has adopted the following approach to ensure that a proactive community involvement program is carried out. The approach is based on key community concerns and meets the requirements of NEPA, CERCLA, CERFA, and the California Health and Safety Code, Section 25356.1:

- o Implement President Clinton's Five Point Plan for economic recovery in an expeditious manner.
- o Enlist the support and full participation of local officials in coordinating community relations activities
- o Provide a full-time Public Affairs Officer from the BRAC office.
- o Provide timely, concise, and easily-understood information to the public and media. The schedule of technical activities, purpose of the activities, and the results will be readily available to interested members of the public. Inquiries will be handled quickly, courteously, and consistently by the BEC for MCAS El Toro. If information cannot be released to the public for national security

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reasons, a clear and simple explanation will be provided as to why the information must be withheld.

- o Educate interested officials and members of the general public about the procedures, policies, and requirements of the IRP. Basic information about the IRP will be made available to help the community better understand the regulatory process.
- o Let the community set the pace of the community relations program. A successful and effective program is tailored around the special requirements of the community. For MCAS El Toro, the structure, format, and schedule for community relations activities will remain flexible to meet the changing needs of the local community.

The following activities will be used by the MCAS El Toro BCT to support the approaches to a proactive community relations program. These activities are in accordance with CERCLA and DTSC requirements.

- o Maintain and update the project mailing list.
- o Maintain the information repository.
- o Update the administrative record file on a quarterly basis.
- o Publish fact sheets to provide timely and clean information on the progress of the IRP.

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- o Publish public notices as needed to disseminate information about upcoming RAB meetings, and the RI/FS, Remedial Action Plan (RAP), and ROD phases of the IRP.

- o Hold formal and informal public meetings as required during the IRP.

- o Evaluate the effectiveness of this approach and update the CRP as necessary to address concerns related to the IRP.

Public review and comment opportunities will be provided for documents related to installation restoration, including the RAP. The CRP defines the length of these public comment periods. A responsiveness summary will also be prepared to respond to the comments received on the RAP and other applicable documents.

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Table 4-1a			
Relationship Between IRP Sites, OUs, and Parcels			
MCAS El Toro BCP - March 1995			
Operable Unit	Operable Unit Definition	Parcel	IRP Site
OU-1	Groundwater on- and off-Station that is contaminated with constituents that have migrated from sites at MCAS El Toro	Not Applicable (1)	18
OU-2A	Sites that are believed to be contributing to the VOC plume in groundwater emanating from from the southwest quadrant of MCAS El Toro.	4A/4B/5A	24
		Not Applicable (2)	25
OU-2B	Two landfill sites that require full investigation and will likely have a presumptive remedy applied.	5C	2
		5C	17
OU-2C	Two landfill sites that will undergo further groundwater monitoring to confirm that groundwater is not being impacted.	2A	3
		3B	5
OU-3A	Various sites that are not related to the regional VOC contamination in groundwater, and are not scheduled for early action.	2F	1
		5A	6
		5A	7
		4B	8
		5A	9
		5A	10
		4A	11
		4B	12
		1A	14
		1D	15
		5A	16
		5A	19
		1B	20
		4B	21
		5A	22
OU-3B	Sites that are scheduled for early actions.	2A	4
		1A	13

Notes:

(1) Site 18 is limited to groundwater and, therefore, is not assigned a parcel number.

(2) Site 25 consists of the Station Washes which border or traverse the Station and, therefore, is not assigned a parcel number.

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Table 4-1b Cleanup Sequence MCAS EI Toro BCP - March 1995					
Parcel	OU	Environmental Risk	Reuse Priority	Cleanup Sequence	Reconcile Comments

To date, only a general OU sequencing strategy has been developed for MCAS EI Toro. As additional information on OU sequencing becomes available, this table will be updated. Refer to Section 4.1.3 for additional information on OU sequencing strategy.

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Table 4-2
Environmental Restoration Planned Early Actions
MCAS El Toro BCP - March 1995

Site (Database Tracking [1])	Description	Action	Objective	Time Frame	Priority	Parcel
IRP 3	Original Landfill	Removal action at drainage ditch (Unit 2)	Prevent infiltration of contaminants from storm water flows	TBD	B	2B
		Potential capping	Prevent exposure of surface soil contaminants/infiltration of water	TBD	C	
		Field screening at former incinerator (SWMU/AOC 194)	Further evaluate site for possible expedition of remediation	TBD	C	
IRP 4	Ferrocene Spill Area	For Unit 1, prepare Modified ESI. Collect samples from 3 locations (0', 2', 4').	Declare NFRAP	TBD	TBD	2B
		For Unit 2, prepare EE/CA. Collect samples from 3 locations. Incorporate modified RI into ESI.	Provide additional characterization of nature and extent of contamination	TBD	TBD	
IRP 5	Perimeter Road Landfill	Potential capping	Prevent exposure of surface soil contaminants/infiltration of water	TBD	C	3B
IRP 7	Drop Tank Drainage Area	For Unit 1, prepare EE/CA. Excavate contaminated soil, perform confirmation sampling.	Prevent exposure to/migration of surface soil contaminants	TBD	TBD	4B
		For Units 2, 3, and 4, define nature and extent of contamination based on Phase I RI results. Prepare EE/CA.	Identify and implement removal action.	TBD	TBD	
		For Unit 5, prepare EE/CA. Excavate contaminated soil; perform confirmation sampling.	Prevent exposure to/migration of surface soil contaminants	TBD	TBD	
IRP 8	DRMO Storage Yard	Field screening	Further evaluate site for possible expedition of remediation	TBD	C	4B
IRP 11	Transformer Storage Area	For entire site, define nature and extent of contamination based on Phase I RI results. Prepare EE/CA.	Identify and implement removal action.	TBD	TBD	4C
IRP 13	Oil Change Area	For Units 1 and 2, prepare EE/CA. Excavate contaminated soil, perform confirmation sampling.		TBD	TBD	1A

Table 4-2 Environmental Restoration Planned Early Actions MCAS El Toro BCP - March 1995						
Site (Database Tracking [1])	Description	Action	Objective	Time Frame	Priority	Parcel
IRP 14	Battery Acid Disposal Area	For Catch Basin, prepare EE/CA. Clean out Catch Basin as house keeping measure.	Prevent exposure to/migration of contaminants	TBD	TBD	1C
		For Unit 1, prepare EE/CA. ESI (RI field screening).	Further characterized to identify extent of contamination and implement removal action.	TBD	TBD	
IRP 17	Communication Station Landfill	Install fence around landfill	Limit access to reduce exposure to physical hazard (located adjacent to	1994	A	5C
		Potential Capping	Prevent exposure of surface soil contaminants/infiltration of water	TBD	C	
IRP 19	ACER Site	For Units 1, 2, and 3, define nature and extent of contamination based on RI results. Prepare EE/CA.	Further characterized to identify extent of contamination and implement removal action.	TBD	TBD	3A
IRP 20	Hobby Shop	For Catch Basin, prepare EE/CA. Clean out Catch Basin as house keeping measure.	Prevent exposure to/migration of contaminants	TBD	TBD	1D
		For Unit 1, prepare EE/CA for no additional work.	Declare NFRAP	TBD	TBD	
		For Unit 2, prepare EE/CA. Excavate contaminated soil; perform confirmation sampling.	Prevent exposure to/migration of surface soil contaminants	TBD	TBD	
		For Unit 3, prepare EE/CA. Excavate contaminated soil; perform confirmation sampling.	Prevent exposure to/migration of surface soil contaminants	TBD	TBD	
		For Unit 4, prepare EE/CA. Excavate contaminated soil; perform confirmation sampling.	Prevent exposure to/migration of surface soil contaminants	TBD	TBD	
IRP 22	Tactical Air Fuel Dispensing System	Field screening at western area (Unit 1) and eastern area (Unit 2)	Further evaluate site for possible expedition of remediation	TBD	C	5A

Table 4-2 Environmental Restoration Planned Early Actions MCAS El Toro BCP - March 1995						
Site (Database Tracking [1])	Description	Action	Objective	Time Frame	Priority	Parcel
IRP 25	Agua Chinon Wash	Collect treatability parameters, characterize nature and extent of contamination. Prepare EE/CA.	Further characterized to identify extent of contamination and implement removal action.	TBD	TBD	(3)
	Bee Canyon Wash	Collect treatability parameters, characterize nature and extent of contamination. Prepare EE/CA.	Further characterized to identify extent of contamination and implement removal action.	TBD	TBD	
Notes: (1) This column refers to alpha-numeric database designation (refer to Table 3-1a) (2) US EPA and Cal-EPA required removal action in a letter dated 01 November 1993. (3) The Station washes (IRP Site 25) traverse or border the Station and are included in numerous parcels. TBD - to be determined The second column shown in the BCP Guidance table is not included.						

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Table 4-3
Environmental Compliance Planned Early Actions
MCAS El Toro BCP - March 1995

Site (Database Tracking [1])	UST No.	Description	Action	Objective	Time Frame	Priority	Parcel
Narmar Housing Area	5212 - 5219 5201 - 5209 5224 - 5236 5239, 5241, 5242	Fuel oil tanks for Station housing	Remove tanks in 1995	Remove and close USTs under Title 22	1995	A	2B
UST 240A	240A	Tank at Aero Club (replaced by UST 797)	Investigate and remediate release	Remove possible source of groundwater contamination	1995	A (2)	1C
UST 398	398	JP-5 Tank Piping Leak	Removals for free product, vapor, and groundwater	Remediate vadose and groundwater contamination	1995	A	2C
UST 529	529	SWMU/AOC 145 (inactive waste oil tank)	Remove tank	Remove possible sources of groundwater contamination	1995	A	4C
UST 672B	672B	SWMU/AOC 176 (inactive waste oil tank)	Remove tank/conduct soil venting treatment pilot project	Remove possible sources of groundwater contamination	1995/TBD	B	4B
Tank Farm 1	184, 185, 186, 187	4 inactive tanks (SWMU/AOC 275 and 276)	Remove 4 tanks	Remove possible sources of groundwater contamination	1995	A	1D
Tank Farm 2	176, 177, 178, 179, 180, 181, 182, 183	8 inactive tanks	Remove 8 tanks	Remove possible sources of groundwater contamination	1995	A (2)	1C
Tank Farm 3	188, 190, 192, 193, 194, 195	2 active/6 inactive tanks	Remove 6 inactive tanks	Remove possible sources of groundwater contamination	1995	A	1B
Tank Farm 4	216 - 218	3 inactive tanks	Remove 3 inactive tanks	Remove and close 3 USTs under Title 22.	1995	A	2A
Tank Farm 555	550	Release of petroleum hydrocarbons at one tank indicated by vadose zone monitoring	Stop leak(s)/investigate and remediate release	Remove possible sources of groundwater contamination	1995	A	2D
Tank Farms 5 & 6	(TF 5) 210, 212, 214; (TF 6) 196 - 205	5 active/3 inactive tanks at TF 5 2 active/2 inactive tanks at TF 6	Remove 5 inactive tanks	Remove possible sources of groundwater contamination	1995	A (2)	2B

Table 4-3
Environmental Compliance Planned Early Actions
MCAS EI Toro BCP - March 1995

Site (Database Tracking [1])	UST No.	Description	Action	Objective	Time Frame	Priority	Parcel
OWS 671		SWMU/AOC 173	Conduct soil venting treatment pilot project	Remove possible sources of groundwater contamination	TBD	C	4B
OWS 672A		SWMU/AOC 175 (inactive OWS)	Remove OWS/conduct soil venting treatment pilot project	Remove possible sources of groundwater contamination	1995/TBD	B	4B

Notes:

(1) This column refers to alpha-numeric database designation (refer to Table 3-1a) or, if more than one LOC is included, a general descriptor is provided (e.g., for Tank Farms).

(2) High priority due to benzene plume in area.

TF - Tank Farm

TBD - to be determined

Chapter 5

Environmental Master Schedules

This chapter presents the Master Schedule of anticipated activities for MCAS El Toro's environmental programs and a summary of anticipated BCT and BRAC Project Team meetings. The Master Schedule is summarized in four distinct schedules as follows:

- o Environmental Restoration Program
- o Mission/Operational-Related Compliance Programs
- o Closure-Related Compliance Programs
- o Natural/Cultural Resources Activities

The Master Schedule is based on a July 1999 closure date for the Station, and includes general activities for each program. At this time, all of the schedules have not been finalized and approved by the entire BCT.

Appendix A provides a summary of costs for each of the environmental programs mentioned above on a year-by-year basis through Station closure. (The cost summary for Appendix A is currently being developed by a DON contractor and will be available later in 1995.)

A property disposal/transfer evaluation model is currently under development for MCAS El Toro to provide the capability for quick, real-time evaluation of base closure and property disposal/transfer strategies. This model will provide MCAS El Toro with the ability to track the various LOCs by geographical location (i.e., by parcel boundaries) and the ability to assign a cost and time frame for the remediation of each parcel based on the various LOCs contained within it. A discussion of some of the aspects and capabilities of this model is presented at the end of this chapter.

5.1 ENVIRONMENTAL RESTORATION PROGRAM

MCAS El Toro IRP sites are grouped into three main OUs. These OUs have been subdivided according to characteristics of the various IRP sites, as described in Chapter 3.

The schedules for OU-1, OU-2A, OU-2B, and OU-3B were revised in January 1995. The schedules for these OUs are shown in Figure 5-1 (Master Program Schedule Installation Restoration Program).

Currently, the schedules for OU-2C and OU-3A are being negotiated by the parties to the FFA. Resolution of the schedules for these OUs is anticipated in 1995.

IRP activities have been conducted at the Station since 1985. A summary of the historical expenditures for the IRP at MCAS El Toro is provided in Table 5-1. This table represents funds allocated through fiscal year 1994.

5.2 COMPLIANCE PROGRAMS

The Master Schedule for compliance programs being conducted on-Station is summarized in Figures 5-2 (Mission-Related Compliance) and 5-3 (Closure-Related Compliance).

The schedules for mission/operational-related compliance activities are summarized in Figure 5-2. Activities depicted in this schedule include maintenance and monitoring requirements to maintain all of the

Station's current environmental operating permits (e.g., UST, air emissions, and NPDES permits).

The schedules for closure-related compliance activities are summarized in Figure 5-3. Activities depicted in this schedule include removal of nonessential USTs, closure of the inactive RCRA storage facility at Building 673-T3, and followup investigations at the nine SWMUs/AOCs identified for further action by DTSC. It is anticipated that as the Station moves nearer to the closure date of July 1999, mission/operational-related compliance activities will transition into closure-related activities.

5.3 NATURAL AND CULTURAL RESOURCES

Natural and cultural resource activities are summarized in Figure 5-4 (Master Program Schedule). Three management activities have been identified and are assumed to continue until the Station closes. These include management of threatened and endangered species, biological resources management, and erosion control. Surveys for on-Station wetlands and sensitive habitats will be completed in 1995.

5.4 MEETING SCHEDULE

A meeting schedule for the BCT is provided in Table 5-1 (BRAC Cleanup Team Meeting Schedule). At a minimum, the BCT will meet on a monthly basis to discuss technical issues, scheduling issues, program status, and team building. Additional meetings will be scheduled as required.

5.5 EVALUATION MODEL FOR MCAS EL TORO

An evaluation model is being developed for MCAS El Toro to provide the capability for timely evaluation of base closure and property disposal/transfer strategies. This model will provide MCAS El Toro with the ability to track the various LOCs by geographical location (i.e., by parcel boundaries) and the ability to assign a cost and time frame for the remediation of each parcel based on the various LOCs contained within it.

5.5.1 Preparation of a Computerized Map of the Station

- o A map of MCAS El Toro has been developed on a GIS database. This map includes the boundaries of the five zones identified in Chapter 4 and the boundaries of the various parcels currently identified within each of the zones.
- o Each of the LOCs identified at the Station (over 800 in number) have been digitized into the GIS system for display on the Station map.
- o A GIS database has been set up to download the identity/name of each of the various LOCs contained within each individual parcel on the map. This GIS database will also provide the BCT with the capability of identifying a list of LOCs contained within any rearrangement of parcels desired for evaluation.

5.5.2 Preparation of Cost Estimates for Closing LOCs

- o A computer-based remedial action cost estimating system (RACER/ENVEST - Remedial Action Cost Engineering and Requirements/Environmental Cost Engineering) has been selected to generate cost estimates for the closure of MCAS El Toro. RACER/ENVEST was developed by the U.S. Air Force and is a widely-used system by the DOD for generating cost estimates for remedial action.
- o To minimize the number of RACER/ENVEST runs needed to cover over 800 LOCs at the Station, grouping of identical (or similar) LOCs was done. For example, grouping of USTs of the same size and material of construction was done so that just one RACER/ENVEST run was needed to be completed for the cost of removal of this size of tank.
- o Another method used to reduce the number of required runs for RACER/ENVEST was to group similar remedial actions. For example, one RACER/ENVEST run was performed for in-situ treatment by SVE for soil contamination at USTs where the extent of contamination is currently not known.
- o The groupings done to reduce the RACER/ENVEST runs to a more manageable number result in various cost runs/modules that must

be applied to LOCs to determine the overall cost of what may be required to close the LOC. Examples include:

- A leaking 25,000-gallon UST will have a cost module for the tank removal and a cost module for remediation of contamination where the extent is not yet known.
- The remediation of an RI/FS site may involve a cost module for excavation of contaminated soil at one unit and in-situ treatment of soil at another unit.
- o To determine the cost of closure for an LOC, manipulation of the various RACER/ENVEST runs/modules is required. A database (or data staging area) has been established to perform the manipulations of the cost modules for the various LOCs.

5.5.3 Set Up a Database (Data Staging Area) for Manipulating RACER/ENVEST Costs

- o A database has been established to include a list of each LOC, its parcel location on the Station, and its estimated cost for closure based on a manipulation of the cost data/modules from RACER/ENVEST. A simple LOC may involve only one cost module; a more complicated LOC may involve the manipulation of two or more cost modules.
- o For USTs, Chapter 4 of the BCP presented a model for assigning the percentage of USTs that leak or do not leak, as well as the percentage that will have shallow or deep contamination requiring

remedial action. To obtain a unit cost for UST closure, the cost for remediating the leaking USTs has been equally distributed among all USTs, since at this time, it is unknown which specific USTs may have leaked. Thus, the cost for closure of a specific UST includes the cost module for removal of the UST plus 30 percent of the cost module for excavating shallow contamination at a UST site plus 15 percent of the cost module for in-situ SVE treatment at a UST site plus 15 percent of the cost module for in-situ bioremediation at a UST site plus 5 percent of the cost module for a groundwater treatment system at a UST site.

5.5.4 Development of a Master Schedule

- o Development of a Master Schedule for the base closure is in progress. This schedule is being developed with Primavera® software, and will show planned time for closure of individual LOCs or groups of LOCs (such as USTs being removed in clusters). LOCs within the boundaries of a parcel will be grouped together, and schedule bars will be presented depicting the estimated time duration associated with closure for each LOC or group of LOCs.
- o The database output from the staging area (closure costs for LOCs) will be linked to the Primavera® schedule so that the cost of closing an LOC or LOC group will be incorporated onto the schedule for each LOC or LOC group being tracked.

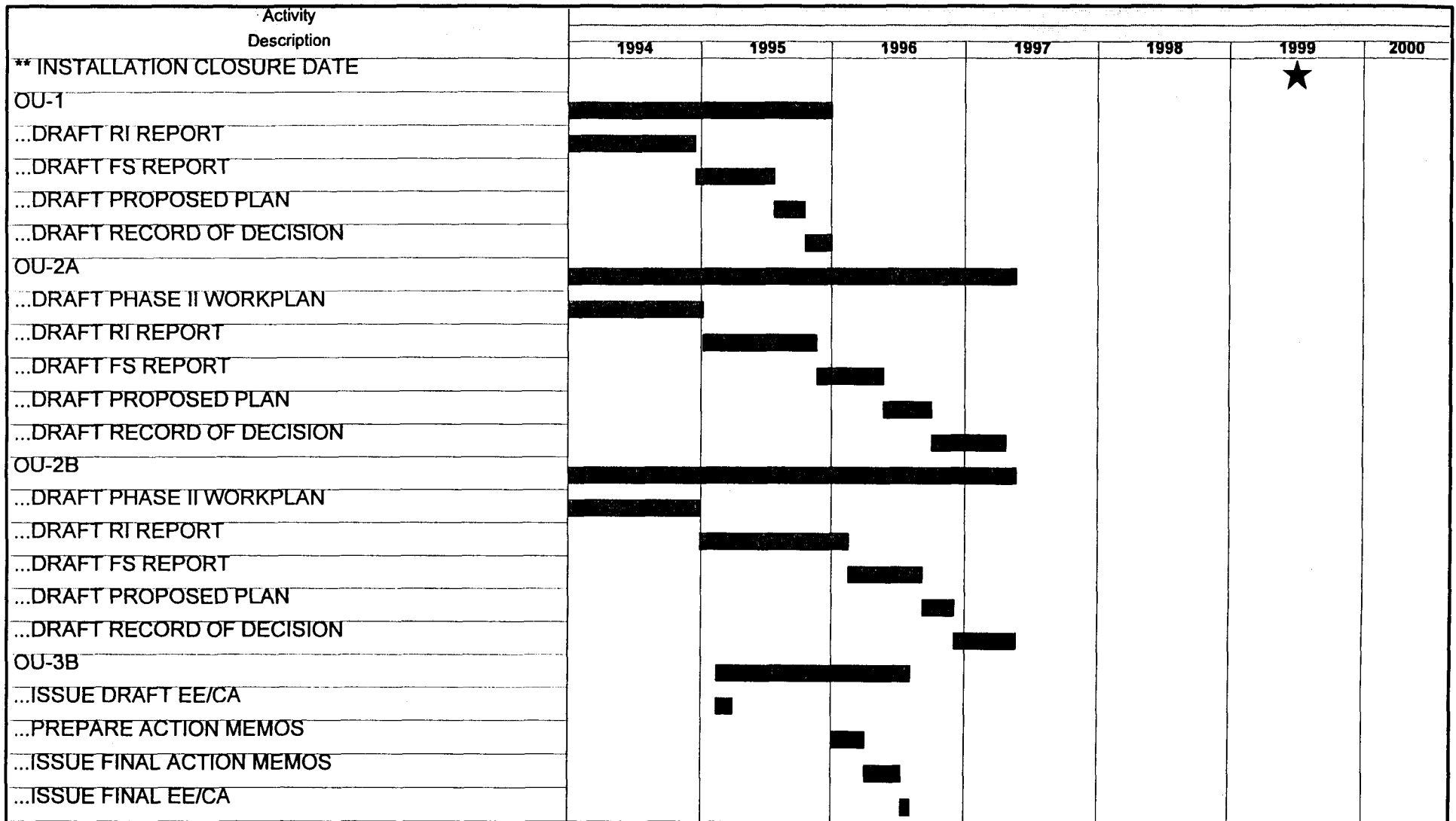
- o The Master Schedule will thus provide an estimated time and an estimated cost for investigation and cleanup of each parcel identified on the Station.
- o The Master Schedule will be a dynamic tool for evaluating base closure strategies. It will need frequent updates as work on base closure continues to progress.

5.5.5 Flexibility for Evaluation of Parcels

- o The system being developed for MCAS El Toro will assist the BCT in evaluating multiple base closure strategies in a reasonably expeditious manner.
- o When changes in parcel boundaries are being considered, the GIS database will be able to quickly download a complete list of all of the various LOCs contained within each newly-identified parcel. With some manipulation of the staging area database, costs for each new parcel can be obtained by summing the costs for the LOCs now contained in that parcel. A new Master Schedule can be developed for the new parcels (and associated LOCs) with costs downloaded from the staging area database.
- o After completion of the initial set of RACER/ENVEST runs and establishment of the staging area database, very few changes will need to be made with these two aspects of the system for MCAS El Toro.

Table 5-1 Project Team Meeting Schedule MCAS El Toro BCP - March 1995	
Date	Topic
21 February 1995	Risk Assessments for OU-2 and OU-3
March 1995	BCT Meeting
06 March 1995	CERFA/EBS Issue Resolution
14 March 1995	Preproposal Conference for Groundwater Monitoring
15 March 1995	OU-1 IAFS Update
April 1995	BCT Meeting
19 April 1995	OU-1 IAFS Update
May 1995	BCT Meeting
May 1995	OU-2 Phase II Work Plan Comment Resolution
June 1995	BCT Meeting
June 1995	EE/CA Comment Resolution
July 1995	BCT Meeting
July 1995	OU-1 RI/FS Draft Presentation
August 1995	BCT Meeting
August 1995	Team Building (El Toro Team)
August 1995	OU-1 IAFS Draft Final Presentation
September 1995	BCT Meeting
September 1995	Review of Groundwater Monitoring Report
October 1995	BCT Meeting
October 1995	BCP Update Meetings
November 1995	BCT Meeting
December 1995	BCT Meeting

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NOTE: The schedules for OU-2C and OU-3A are being negotiated by the parties to the FFA. Resolution of the schedules for these OUs is anticipated in 1995.

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Activity Description								
	1994	1995	1996	1997	1998	1999	2000	2001
** INSTALLATION CLOSURE DATE						★		
UST MANAGEMENT/MONITORING/PERMITTING								
MAINTAIN AIR PERMITS								
CONTINUE NPDES MONITORING								

Project Start 01JAN94
 Project Finish 31DEC00
 Data Date 01JAN94
 Plot Date 27FEB95

NAVY

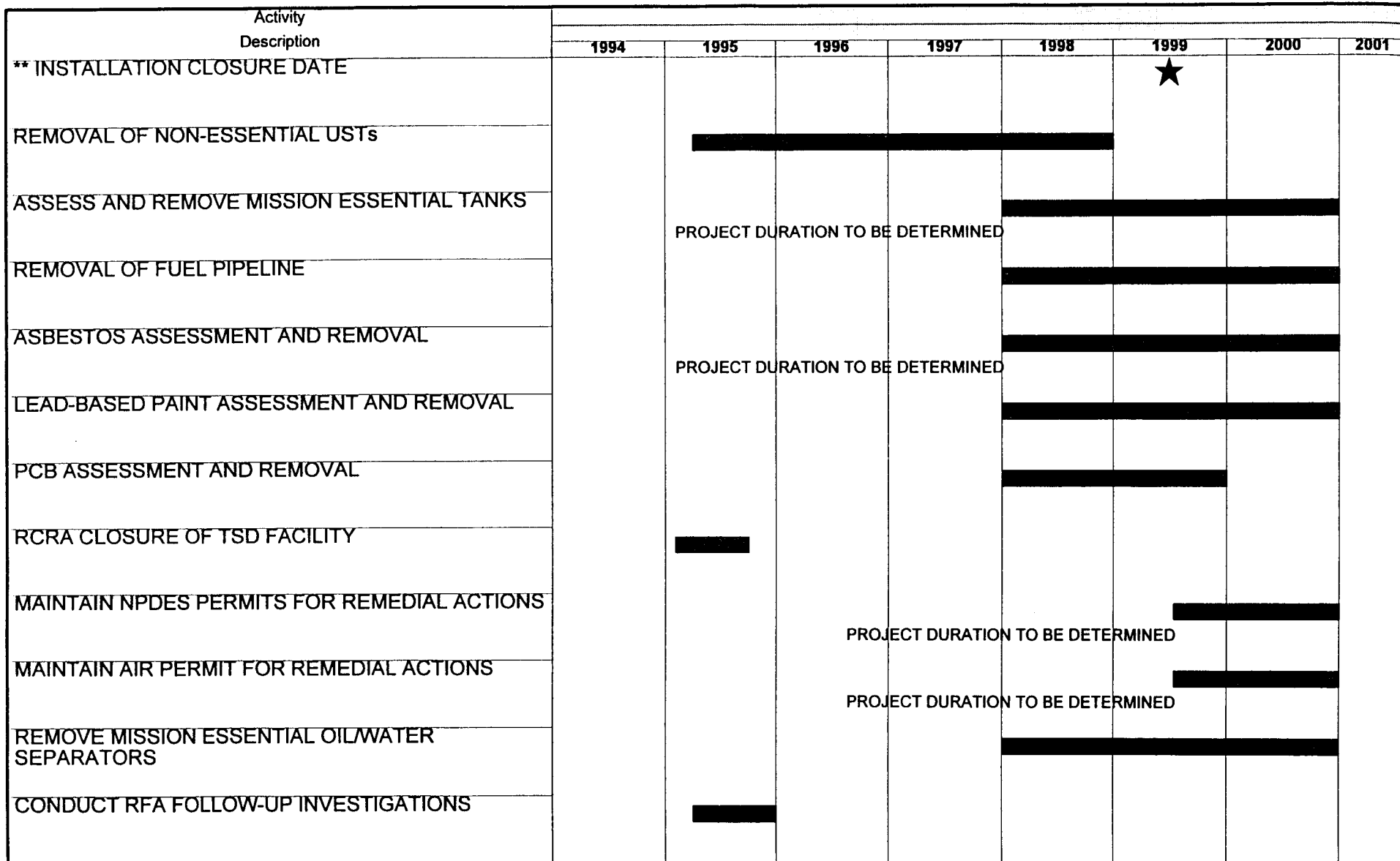
FIGURE 5-2
 MASTER PROGRAM SCHEDULE
 MISSION-RELATED COMPLIANCE

Sheet 1 of 1




MCAS EL TORO BCT - MARCH 1995

Date	Revision	Checked	Approved

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**FIGURE 5-3
MASTER PROGRAM SCHEDULE
CLOSURE-RELATED COMPLIANCE**

Project Start	01JAN94	 Early Bar
Project Finish	31DEC00	 Progress Bar
Data Date	01JAN94	 Critical Activity
Plot Date	01MAR95	

NAVY

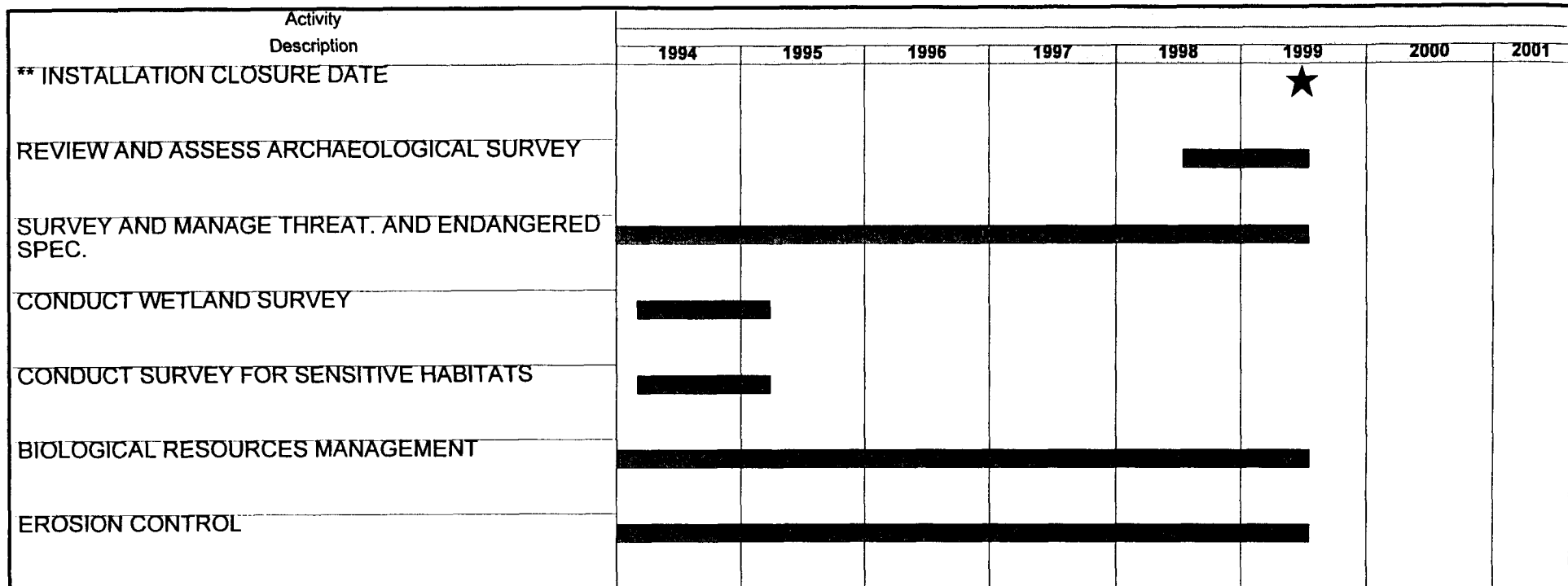
(c) Primavera Systems, Inc.

Sheet 1 of 1

MCAS EL TORO BCT - MARCH 1995

Date	Revision	Checked	Approved

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Project Start 01JAN94
 Project Finish 31DEC00
 Data Date 01JAN94
 Plot Date 01MAR95

NAVY

FIGURE 5-4
 MASTER PROGRAM SCHEDULE
 NATURAL/CULTURAL RESOURCES ACTIVITY

Sheet 1 of 1

MCAS EL TORO BCT - MARCH 1995			
Date	Revision	Checked	Approved

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Table 6-1
Future Land Use Risk Assessment for Development of Remedy Selections
MCAS EI Toro BCP - March 1995

Site ID	Risks	Contaminants (1)			Current Use	Adjacent Use	Anticipated Use
		Groundwater	Subsurface-Soil	Surface/Sediment (2)			
1 (OU-3A)	Refer to Appendix E	VOCs, Metals, Gross alpha/beta, GCP	Metals (4)	VOCs, TFH, TRPH, GCP	EOD Range	Open Space	TBD
2 (OU-2B)	Refer to Appendix E	Metals, Gross alpha/beta, VOCs, GCP	Metals, VOCs, Herbicides	Metals, VOCs, SVOCs, Herbicides, TFH, Pesticides and PCBs	Inactive landfill	Agricultural, Open Space	TBD
3 (OU-2C)	Refer to Appendix E	Metals, Gross alpha/beta, GCP, VOCs, SVOCs, Pesticides and PCBs	Metals, VOCs, Herbicides, TFH, SVOCs	Metals, VOCs, Pesticides, Herbicides, PCBs, TFH, Dioxins, GCP, SVOCs	Inactive landfill	Maintenance, Supply/Storage, Housing, Fuel Storage	TBD
4 (OU-3B)	Refer to Appendix E	Metals, Gross alpha/beta, GCP, VOCs, TFH	Metals, TFH, TRPH	Metals, VOCs, Pesticides, Herbicides, PCBs, TFH, TRPH, GCP, SVOCs	Open Area	Engine Test Cell	TBD
5 (OU-2C)	Refer to Appendix E	Metals, VOCs, Gross alpha/beta, GCP, VOCs	Metals, Herbicides	VOCs, Metals, Pesticides and PCBs, TFH, TRPH	Inactive Landfill, RI Derived Waste Storage Area	Golf Course, Agriculture, Airfield Operations	TBD
6 (OU-3A)	Refer to Appendix E	Metals, VOCs, SVOCs, GCP	Metals, VOCs	Metals, SVOCs, TFH, TRPH, VOCs	Open Space, Airfield Operations	Airfield Operations, Agriculture	TBD
7 (OU-3A)	Refer to Appendix E	Metals, VOCs, TFH, GCP, Gross alpha/beta	Metals, VOCs, SVOCs, TFH, TRPH	Metals, VOCs, SVOCs, TFH, TRPH, Pesticides and PCBs	Open Space, Airfield Operations	Airfield Operations, Supply/Storage, Maintenance	TBD
8 (OU-3A)	Refer to Appendix E	Metals, VOCs, GCP	Metals, VOCs, SVOCs, Pesticides, PCBs, TFH, TRPH	Metals, VOCs, Pesticides, PCBs, TFH, TRPH, SVOCs	DRMO Storage Yard	Supply/Storage, Maintenance	TBD
9 (OU-3A)	Refer to Appendix E	Metals, VOCs, TFH, Gross alpha/beta, GCP	Metals, VOCs, SVOCs, TFH, TRPH	Metals, VOCs, SVOCs, TFH, TRPH	Open Space	Airfield Operations, Supply Storage	TBD
10 (OU-3A)	Refer to Appendix E	Metals, SVOCs, VOCs, GCP	Metals, TFH	Metals, VOCs, SVOCs, TFH, TRPH	Aircraft Parking (Tarmac)	Airfield Operations, Supply Storage, Maintenance	TBD
11 (OU-3A)	Refer to Appendix E	Not investigated	Not investigated	Pesticides, PCBs	Storage Area	Supply/Storage, Maintenance, Administrative Support	TBD

Chapter 6

Technical and Other Issues to be Resolved

This chapter summarizes technical, administrative, and other issues that are yet to be fully resolved. This chapter of the BCP will be updated as issues proceed toward resolution and additional issues are identified.

6.1 DATA USABILITY

In order to obtain data of usable quality for decisionmaking, data quality management is necessary. Management steps include defining data quality objectives, setting procedures for QA/QC practices, and developing data management procedures that provide for easy information storage, retrieval, and transfer.

To date, major data collection programs for MCAS El Toro include the IRP (RI/FS) and the RFA. An extensive amount of analytical data was collected under both of these programs under agency-approved Quality Assurance Project Plans (QAPPs). Analyses were generally performed at data quality level IV, and analytical data from both programs were checked via data validation efforts. The validated data from these programs have been loaded into the International Technology Environmental Management System (ITEMS) database.

Historical data prior to or outside of these major programs may need to be evaluated on a case-by-case basis for data usability and quality.

6.2 INFORMATION MANAGEMENT

Analytical data from both the RI/FS and the RFA Programs has been entered into the ITEMS database for MCAS El Toro. Data from future

investigations should be combined with this data to create a Master Database for the Station. Currently, data from UST removals performed at the Station is not in the database.

Geographical data for MCAS El Toro have been included in a GIS database. The GIS base map currently has the location of over 800 LOCs and the zone/parcel boundaries for base closure digitized into the system. IRP groundwater wells and analytical data are also included in the GIS database.

6.2.1 BRAC Cleanup Team Action Items

- o Evaluate historical data not currently in the database for possible incorporation into a Master Database for the Station
- o Ensure that data from future data collection activities (e.g., Phase II of the IRP) are entered into the database
- o Ensure database integrity (i.e., it is current and correct for all users)

6.2.2 Rationale

- o Accessibility of data to the BCT will assist in the review and management of data, and expedite the ability of the BCT to make decisions.

6.2.3 Status/Strategy

- o Continue receiving data in electronic form from the laboratories involved with work at MCAS El Toro.
- o Require future contractors to have data in a format that is compatible with the ITEMS database.
- o Continue to update the database as appropriate.

6.3 DATA GAPS

Phase II of the RI is currently being conducted at the Station. The Work Plan established for this effort was based on filling data gaps that may have existed after completion of Phase I.

Currently identified data gaps that will need to be addressed by the BCT include the following:

- o Numerous features/anomalies were identified by SAIC in a review of aerial photographs of the Station. A meeting of the BCT to discuss this issue will need to be conducted.
- o Additional interviews of past and present employees familiar with the refurbishing operations at the former "rework facility" at Buildings 296, 297, and 324 will be conducted to enhance current knowledge of this past facility located in the general area of a potential source of the VOC-contaminated groundwater.

- o The UST Tiger Team will identify/verify USTs and associated data (capacity, material of construction, location, etc.) at the Station. This team will also identify strategies for UST management with respect to essential Station operation and base closure activities.

6.4 BACKGROUND LEVELS

Background levels for MCAS El Toro were addressed as part of the preparation of the Draft Phase II RI/FS Work Plan submitted in November 1993. The following subsections present discussions of activities conducted to date, for evaluating background levels for surface soils, groundwater, surface water, and sediments.

Surface Soils. Background levels for metals and pesticides/herbicides in soils at MCAS El Toro were established in the Draft Phase II RI/FS Work Plan. The upper range of naturally occurring metal concentrations and pesticide/herbicide concentrations was estimated by calculating the 99th percentile of the log normal distribution of the data values. The results of the statistical analysis for the metal parameters and pesticides/herbicides in background soil samples are presented in Tables E-2a and E-2b, respectively (Appendix E).

Groundwater. Because of the complexity of the geochemistry and the high variability of the data, it does not appear to be feasible to establish regional background concentrations for inorganic compounds in groundwater at this time. The Draft Phase II RI/FS Work Plan proposed geochemical analysis of the RI data as part of the RI Report to evaluate ambient concentrations of inorganic in groundwater.

Stormwater. Background levels in stormwater have not been established for MCAS El Toro. Limited stormwater sampling was conducted as part of the Phase I RI. Additional upgradient surface water samples have been proposed for the Phase II RI. These data will be combined with Phase I upgradient data to evaluate ambient concentrations of inorganic and organic compounds that are flowing onto MCAS El Toro in surface drainage.

Sediment. For screening purposes for the Draft Phase II RI/FS Work Plan, sediment data collected during the Phase I RI were compared to the reference background concentrations for inorganic compounds in surface soils. Additional upgradient soil sampling proposed as part of the investigation of RI/FS Site 25 (Major Drainages) will be evaluated to assess concentrations of organic chemicals, particularly pesticides and herbicides, that may be migrating onto MCAS El Toro through surface drainage.

6.4.1 BRAC Cleanup Team Action Items

- o Reach consensus on background levels for stormwater, sediment, and groundwater.
- o Identify and agree on the sample locations for data collection.
- o Review and comment on numbers, sequence, and schedule of sampling.
- o Identify required analytical parameters and specify methods of analysis.

6.4.2 Rationale

Background concentrations of elements in the environment at MCAS El Toro must be determined for use in the Baseline Risk Assessment computations and/or as screening criteria. Media to be addressed include surface soils, groundwater, surface water, and sediments.

6.4.3 Status/Strategy

- o Evaluate groundwater quality data produced from continuing groundwater monitoring activities to evaluate background levels for groundwater.
- o Evaluate data from surface water sampling planned to be performed as part of the Phase II RI to determine background levels in surface waters entering the Station.
- o Determine soil sample locations, frequency, and analytical methods for completion of work scheduled for 1995.

6.5 RISK ASSESSMENTS

6.5.1 BRAC Cleanup Team Action Items

- o Update risk-based criteria (RBC) based on current EPA toxicity criteria.

- o The BCT hold meetings for risk assessment issues for OU-2 and OU-3.

6.5.2 Rationale

A baseline risk assessment must be performed to establish cleanup criteria for IRP sites to protect human health. In addition, an ecological risk assessment will be prepared for the Station.

6.5.3 Status/Strategy

The Draft Phase II RI/FS Work Plan designed sampling schemes that will provide sufficient sample data to conduct a baseline risk assessment and ecological risk assessment. The baseline risk assessment will be prepared following completion of the Phase II RI.

6.6 BASE-WIDE REMEDIAL ACTION STRATEGY

The strategy for base-wide remedial action will need to take the following into consideration:

- o Removal operations must continue with minimal delays in order to expedite the restoration activities and address environmental issues as developed by the ongoing investigations.
- o The BCT will continue to focus on early action activities already identified, and early action items discovered as investigations continue.

- o To successfully accomplish the early transfer of parcels at MCAS El Toro, there will need to be a geographical component to the evaluation and prioritization of LOCs for remedial action.
- o The Station's numerous USTs will need significant attention since it is anticipated that a high percentage of these have leaked. At this time, it is being assumed that 60 percent of the USTs have leaked and may require some form of remedial action. A UST Tiger Team has been formed to address UST issues at the Station. Members of the Tiger Team include representatives from the Station's EO, Engineering Department, Planning Department, BRAC Office, and SWDIV. The Tiger Team will focus on compliance, removal, remediation, and closure of UST sites.
- o The tenant migration schedule and operational constraints should be considered as parcels are prioritized for remedial actions and transfer.
- o In an effort to minimize costs, schedule considerations for conducting remedial work simultaneously with other sites or scheduling mobilization for remediation of individual sites should be considered.

The reuse plan being developed by the community is highly controversial. When an acceptable reuse plan is completed, additional remedial action strategies may need to be considered.

6.7 INTERIM MONITORING OF GROUNDWATER AND STORM WATER

At present, two groundwater sampling events have been completed at MCAS El Toro. Results of these sampling events are presented in the Phase I RI Technical Memorandum (Jacobs, 1993a). A Groundwater Monitoring Plan has been developed by the Navy. This plan is being reviewed by the BCT and is expected to become final later in 1995. The groundwater sampling plan describes the frequency and analytical parameters for the sampling program. It is anticipated that the program will be implemented in mid-1995, and that four consistent rounds of base-wide groundwater sampling will be conducted.

Three rounds of stormwater sampling have been conducted as part of the Phase I RI. An additional round of storm water sampling was conducted subsequent to the Phase I RI. Results of the first three rounds of storm water sampling are presented in the Phase I RI Technical Memorandum (Jacobs, 1993a) and analytical data for the subsequent sampling event are currently being evaluated by the Navy. The Navy is currently evaluating the planned future sampling events for stormwater.

Two ponded water sampling events were conducted in mid-1994. Analytical data for these sampling events are currently being evaluated by the Navy.

6.8 EXCAVATION OF CONTAMINATED MATERIALS

Excavation of contaminated materials will be involved in a number of remedial actions taken at various locations around the Station. Some

of the remedial actions include: removal of contaminated soil at former UST locations, site characterization activities, in-situ remediation, etc.

Prior to initiation of excavation activities, the BCT will need to consider the following waste handling issues:

- o Sampling and analytical protocols for characterization of wastes and for verification of cleanup
- o Site-specific parameters and limits to determine if the excavated material is hazardous
- o Disposal facilities to be used for excavated hazardous materials, and disposal protocol
- o Disposal methods and facilities for nonhazardous wastes that may or may not be contaminated with toxic or TSCA materials, such as PCBs or asbestos
- o Development of an investigation-derived waste (IDW) plan

Management of contaminated materials will be done in accordance with regulations current at the time of the excavation activities.

6.9 PROTOCOLS FOR REMEDIAL DESIGN REVIEWS

Remedial design reviews will be performed in accordance with the QAPP developed for the remedial design effort.

6.10 CONCEPTUAL MODELS

6.10.1 BRAC Cleanup Team Action Items

No Project Team action items are currently identified for conceptual site models.

6.10.2 Rationale

Conceptual site models are used to show relationships between potential sources, exposure pathways, and receptors. Complete exposure pathways include sources, mechanisms of contaminant release, transport media, exposure points, and exposure routes at points of receptor contact.

6.10.3 Status/Strategy

Conceptual models for the MCAS El Toro IRP sites were developed as part of the Draft Phase II RI/FS Work Plan based on existing data from the Phase I RI. The conceptual models are provided in Appendix E of this document. The conceptual models may be revised as additional information on the IRP sites becomes available. As appropriate, the conceptual models in Appendix E may be replaced or supplemented.

6.11 CLEANUP STANDARDS

Preliminary cleanup standards for the IRP sites are currently based on the preliminary risk assessment prepared as part of the Draft Phase II RI/FS Work Plan completed in November 1993.

Groundwater cleanup standards are currently being evaluated as part of the FS for OU-1. Metals concentrations in shallow soils will be compared to background levels for metals (refer to Subsection 6.4).

6.11.1 BRAC Cleanup Team Action Items

- o Establish cleanup standards on a site-by-site basis
- o Evaluate preliminary cleanup standards prepared during the Phase II RI/FS Work Plan and the FS for OU-1

6.11.2 Rationale

- o Cleanup standards will help determine the extent of removal or remediation, and designation of cleanup areas

6.11.3 Status/Strategy

- o Continue to review and evaluate preliminary cleanup standards
- o Evaluate background levels on a site-by-site basis

6.12 INITIATIVES FOR ACCELERATING CLEANUP

As an ongoing action item, the BCT will identify and evaluate opportunities for accelerating cleanup throughout the base closure process. Some currently identified methods for acceleration include:

Chapter 6

Technical and Other Issues to be Resolved

- o Use of presumptive remedies as appropriate for site remedial action. The BCT will consider using innovative technologies that may accelerate the cleanup process.
- o Fast-tracking of Navy contracting procedures for cleanup activities.
- o Identifying portions of sites that may be appropriate for early remedial action.
- o Use of mobile laboratory for in-field decisionmaking.
- o Field screening.
- o Accelerated analytical turnaround times.
- o Concurrent document review between BCT members.
- o OUs have been subdivided and schedules have been staggered to prioritize remediation at IR sites.
- o Source areas are being investigated for potential early remedial actions.
- o In October 1990, EPA, DTSC, RWQCB, and the Navy signed an FFA to conduct an RI/FS. Details of the FFA are discussed in Subsection 3.1.1 of the BCP.

- o Document review periods for the regulatory agencies are described in the FFA. Primary documents (e.g., Draft RI Reports, Community Relation Plans, etc.) have a 60-day review period and secondary documents (e.g., Treatability Studies, Site Characterization Summaries, RFAs, etc.) have a 30-day review period.

6.13 REMEDIAL ACTIONS

The BCT will maintain a bias toward implementing effective and expedited remedial action during the course of the base closure effort at MCAS El Toro.

6.14 REVIEW OF SELECTED TECHNOLOGIES FOR APPLICATION OF EXPEDITED SOLUTIONS

Review of technologies for expediting remedies will be conducted during the RI/FS. Presumptive remedies, as appropriate, will be considered for sites. Publications such as "Treatment Technologies Applications Matrix for Base Closure Activities," prepared by the California Military Base Closure Environmental Committee, dated November 1993, will also be reviewed as part of the evaluations performed in selecting technologies.

6.15 HOT SPOT REMOVALS

At this time, no hot spots (i.e., sites that pose an immediate danger to the environment and/or human health) have been identified at the Station. In the event that any hot spots are discovered during ongoing

investigations, the BCT will give such sites high priority for early (near-immediate) action.

6.16 IDENTIFICATION OF CLEAN PROPERTIES

The environmental condition of properties is being evaluated in CERFA and EBS activities. Draft CERFA and EBS reports are currently being reviewed by the BCT. The final reports will be submitted to NAVFACENGCOM on 01 April 1995.

Twenty CERFA parcels were identified in the draft CERFA and EBS reports. A confirmation sampling program was conducted for 12 of these parcels. Shallow soil samples were collected and analyzed for pesticides and herbicides. Results of the sampling program will be included in the final CERFA and EBS reports.

6.16.1 BRAC Cleanup Team Action Items

The BCT will continue the site characterization per BRAC guidance and identify clean properties at the Station.

6.16.2 Rationale

Identification of clean properties is necessary for early disposal of Station property. Results of the confirmation sampling effort will assist in agency concurrence on the CERFA parcels.

6.16.3 Status/Strategy

In the Draft CERFA and EBS Reports, 20 parcels have been identified as uncontaminated under CERFA. Final determinations for clean properties will be made following agency concurrence of the CERFA and EBS documents being prepared for the Station.

6.17 OVERLAPPING PHASES OF THE CLEANUP PROCESS

As an ongoing effort, the BCT will attempt to identify phases of the cleanup process that can be overlapped to produce a potential reduction in the time required for completion of the cleanup process. As such, areas of overlap include the following:

- o The RFA was conducted concurrent with the Phase I RI.
- o Treatability studies will be conducted during the early stages of the OU-2 RI.
- o EE/CAs will be conducted simultaneously with the Phase II RI activities. The EE/CAs are discussed in Subsection 3.1 of the BCP.

6.18 IMPROVED CONTRACTING PROCEDURES

Environmental restoration at the Station will require the Navy to aggressively issue numerous contracts for investigation and remediation activities. Flexible contracting procedures must be implemented to expedite installation restoration and meet established closure schedules.

The BCT will get input from the Station's contracting officer at SWDIV and other members of the Project Team on new approaches to contracting to fast-track cleanup of the Station.

6.19 INTERFACING WITH THE COMMUNITY REUSE PLAN

To date, no reuse plan has been prepared for MCAS El Toro. Regular meetings and clear communication between the BCT members and the ETRPA will be critical to incorporate reuse plans in the restoration plans for the Station.

6.20 BIAS FOR CLEANUP INSTEAD OF STUDIES

The Navy's current position emphasizes expedited remedial actions and attempts to avoid traditional lengthy site characterization studies and prolonged RI/FS activities.

BCT members should collaborate with agencies in devising future work plans, identifying cleanup criteria, and selecting remedial actions in an effort to aggressively pursue cleanup instead of studies and data collection.

It is realized that sufficient sampling and analysis will be required before attempting unnecessary or costly cleanup in some areas and missing other hot spots entirely. However, excessive statistical analysis and unrealistic numbers of sampling locations could be avoided by addressing the following issues:

- o Limited confirmatory laboratory tests are accepted along with field data
- o Analysis is limited only to site-specific parameters
- o Indicator parameters are accepted for the majority of the routine tests
- o Sample numbers and sample frequencies should not be associated with theoretical and/or statistical calculations without regard to site history, site geotechnology, and history of past operations

6.21 EXPERT INPUT ON CONTAMINATION AND POTENTIAL REMEDIAL ACTIONS

The BCT and RI/FS team should consult experts to provide input on faster investigative techniques and potential remedial actions to meet the aggressive cleanup schedules established for the Station.

6.22 PRESUMPTIVE REMEDIES

Presumptive remedies are remedies that, based on past evaluations of remedial alternatives at similar sites, can be presumed to be an effective, optimum remedy. Presumptive remedies can expedite the evaluation process that is normally involved in selecting a remedial alternative for a site through the FS process. The BCT will ensure that presumptive remedies are considered for implementation at appropriate sites at the Station.

6.23 PARTNERING (USING INNOVATIVE MANAGEMENT, COORDINATION, AND COMMUNICATION TECHNIQUES)

A partnering agreement among the Project Team is essential for efficient management of the base closure process. As a group, the BCT has established a partnering agreement and Team Charter that incorporates the latest and most efficient management techniques to coordinate installation restoration activities.

The following Team Charter agreement was developed for MCAS El Toro during a team building seminar that was held in October 1994:

"We, the MCAS El Toro partners, commit to effectively working together to maximize restoration and reuse of MCAS El Toro by 1999. We will accomplish this goal through teamwork, dedicated and focused participation, our ethics outlined below, and effective communication between all partners."

"We want the project to be enjoyable to work on and will work together with trust and respect, and will ensure that all team members interests impact decisions. Problems will be resolved quickly or escalated if appropriate, and by team members closest to the issue. As partners, we commit to communicating our mission and partnership goals to new project members and encourage them to embrace this partnership."

"Our mutually agreed upon ethical standards are listed below"

CODE OF ETHICS

- | | |
|--------------------------|----------------------|
| o Integrity | o Honesty |
| o Trust | o Openness |
| o Model the behavior you | o Dependable |
| o Expect from others | o Respectful |
| o Sincere | o Be a good listener |
| o Empathetic | o Accountable |
| o Value other's opinions | o Have fun |
| o Responsible | o Credible |
| o Honor diversity | o Be candid |

6.24 UPDATING THE EBS AND NATURAL/CULTURAL RESOURCES DOCUMENTATION

The Draft EBS Report is currently being reviewed by the BCT. The final report will be submitted to NAVFACENGCOM on 01 April 1995.

Natural and cultural resources documentation provided in this BCP will be updated as additional information becomes available.

6.25 IMPLEMENTING THE POLICY FOR ONSITE DECISIONMAKING

Onsite decisionmaking authority during future field efforts at MCAS El Toro will be an essential part of expediting the investigation and cleanup effort at sites. While field efforts are in progress, the BCT will periodically check that onsite decisionmaking is occurring.

6.26 AIR EMISSION CREDITS

Air emission credits are considered valuable assets that will require careful considerations for redistribution. To date, the DON has not finalized a strategy for the redistribution of air emission credits. It is expected that air credits will become available as the squadrons at the MCAS El Toro migrate and the mission begins to close. These credits may potentially be used at other federal facilities or by the community.

6.27 CARETAKING RESPONSIBILITIES

MCAS El Toro is scheduled to close in July 1999. The caretaker of the installation, during the period from when the Station closes through the final transfer of property, has not been identified. It is expected that the caretaker will be responsible for various duties, including coordination with regulatory agencies, reuse entities, public groups, and remediation contractors. In addition, the caretaker will be responsible for performing other tasks in support of the mission transfer, such as personnel matters, public relations, and compliance activities.

The DON is currently evaluating various alternatives for caretaking responsibilities. Once the caretaking responsibilities have been identified, the BCT will meet with the designated representatives to coordinate closure and transfer activities.

Table 6-1
Future Land Use Risk Assessment for Development of Remedy Selections
MCAS EI Toro BCP - March 1995

Site ID	Risks	Contaminants (1)			Current Use	Adjacent Use	Anticipated Use
		Groundwater	Subsurface-Soil	Surface/Sediment (2)			
1 (OU-3A)	Refer to Appendix E	VOCs, Metals, Gross alpha/beta, GCP	Metals (4)	VOCs, TFH, TRPH, GCP	EOD Range	Open Space	TBD
2 (OU-2B)	Refer to Appendix E	Metals, Gross alpha/beta, VOCs, GCP	Metals, VOCs, Herbicides	Metals, VOCs, SVOCs, Herbicides, TFH, Pesticides and PCBs	Inactive landfill	Agricultural, Open Space	TBD
3 (OU-2C)	Refer to Appendix E	Metals, Gross alpha/beta, GCP, VOCs, SVOCs, Pesticides and PCBs	Metals, VOCs, Herbicides, TFH, SVOCs	Metals, VOCs, Pesticides, Herbicides, PCBs, TFH, Dioxins, GCP, SVOCs	Inactive landfill	Maintenance, Supply/Storage, Housing, Fuel Storage	TBD
4 (OU-3B)	Refer to Appendix E	Metals, Gross alpha/beta, GCP, VOCs, TFH	Metals, TFH, TRPH	Metals, VOCs, Pesticides, Herbicides, PCBs, TFH, TRPH, GCP, SVOCs	Open Area	Engine Test Cell	TBD
5 (OU-2C)	Refer to Appendix E	Metals, VOCs, Gross alpha/beta, GCP, VOCs	Metals, Herbicides	VOCs, Metals, Pesticides and PCBs, TFH, TRPH	Inactive Landfill, RI Derived Waste Storage Area	Golf Course, Agriculture, Airfield Operations	TBD
6 (OU-3A)	Refer to Appendix E	Metals, VOCs, SVOCs, GCP	Metals, VOCs	Metals, SVOCs, TFH, TRPH, VOCs	Open Space, Airfield Operations	Airfield Operations, Agriculture	TBD
7 (OU-3A)	Refer to Appendix E	Metals, VOCs, TFH, GCP, Gross alpha/beta	Metals, VOCs, SVOCs, TFH, TRPH	Metals, VOCs, SVOCs, TFH, TRPH, Pesticides and PCBs	Open Space, Airfield Operations	Airfield Operations, Supply/Storage, Maintenance	TBD
8 (OU-3A)	Refer to Appendix E	Metals, VOCs, GCP	Metals, VOCs, SVOCs, Pesticides, PCBs, TFH, TRPH	Metals, VOCs, Pesticides, PCBs, TFH, TRPH, SVOCs	DRMO Storage Yard	Supply/Storage, Maintenance	TBD
9 (OU-3A)	Refer to Appendix E	Metals, VOCs, TFH, Gross alpha/beta, GCP	Metals, VOCs, SVOCs, TFH, TRPH	Metals, VOCs, SVOCs, TFH, TRPH	Open Space	Airfield Operations, Supply Storage	TBD
10 (OU-3A)	Refer to Appendix E	Metals, SVOCs, VOCs, GCP	Metals, TFH	Metals, VOCs, SVOCs, TFH, TRPH	Aircraft Parking (Tarmac)	Airfield Operations, Supply Storage, Maintenance	TBD
11 (OU-3A)	Refer to Appendix E	Not investigated	Not investigated	Pesticides, PCBs	Storage Area	Supply/Storage, Maintenance, Administrative Support	TBD

Table 6-1
Future Land Use Risk Assessment for Development of Remedy Selections
MCAS EI Toro BCP - March 1995

Site ID	Risks	Contaminants (1)			Current Use	Adjacent Use	Anticipated Use
		Groundwater	Subsurface-Soil	Surface/Sediment (2)			
12 (OU-3A)	Refer to Appendix E	Metals, VOCs, GCP	Metals, TFH, TRPH, SVOCs, Pesticides and PCBs	Metals, VOCs, SVOCs, Herbicides, TFH, TRPH, Pesticides and PCBs, GCP	Open Space, Contractor Staging Area	Airfield Operations, Supply/Storage	TBD
13 (OU-3B)	Refer to Appendix E	Metals, VOCs, TFH, GCP	Metals, SVOCs, TFH	Metals, VOCs, SVOCs, TFH, TRPH, Pesticides, PCBs	Historic Aircraft Storage	Supply/Storage, Maintenance, Fuel Storage	TBD
14 (OU-3A)	Refer to Appendix E	Metals, VOCs, GCP	Metals, TRPH	Metals, VOCs, SVOCs, TFH, TRPH	Open Area	Supply/Storage, Maintenance, Community Support	TBD
15 (OU-3A)	Refer to Appendix E	Metals, VOCs, TFH, GCP	Metals	Metals, VOCs, SVOCs, TFH, TRPH	Storage Area	Administrative Support, Supply/Storage	TBD
16 (OU-3A)	Refer to Appendix E	Metals, GCP	Metals, SVOCs, TFH, TRPH, VOCs	Metals, VOCs, SVOCs, TFH, TRPH	Open Space	Airfield Operations, Crash Crew Training	TBD
17 (OU-2B)	Refer to Appendix E	Metals, VOCs, GCP	Metals, Herbicides, TFH, TRPH	Metals, VOCs, Herbicides, Pesticides, PCBs, TFH, TRPH, SVOCs	Inactive landfill	Agricultural, Open Space, Housing	TBD
18 (OU-1)	Refer to Appendix E	VOCs			NA	NA	TBD
19 (OU-3A)	Refer to Appendix E	Metals, VOCs, Gross alpha/beta, GCP	Metals, VOCs, SVOCs, TFH, TRPH	Metals, VOCs, SVOCs, TFH, TRPH	Unused	Airfield Operations	TBD
20 (OU-3A)	Refer to Appendix E	Metals, VOCs, GCP	Metals	VOCs, SVOCs, TFH, TRPH, Pesticides and PCBs, Metals	Hobby Shop	Community Support	TBD
21 (OU-3A)	Refer to Appendix E	Metals, VOCs, GCP	Metals, Pesticides, TFH, PCBs	Metals, VOCs, SVOCs, Herbicides, TFH, Pesticides and PCBs	Material Storage	Supply/Storage	TBD

Table 6-1
Future Land Use Risk Assessment for Development of Remedy Selections
MCAS El Toro BCP - March 1995

Site ID	Risks	Contaminants (1)			Current Use	Adjacent Use	Anticipated Use
		Groundwater	Subsurface-Soil	Surface/Sediment (2)			
22 (OU-3A)	Refer to Appendix E	Metals, VOCs, TFH, Gross alpha/beta, GCP	Metals, VOCs, SVOCs, TFH	Metals, VOCs, SVOCs, Pesticides and PCBs, TFH, TRPH	Aircraft Parking (Tarmac/Gravel)	Airfield Operations, Supply/Storage, Maintenance	TBD
24 (3) (OU-2A)	Refer to Appendix E	VOCs	VOCs	VOCs	Airfield Operations, Supply/Storage, Maintenance, Administrative Support	Airfield Operations, Supply/Storage, Maintenance, Administrative Support	TBD
25 (3) (OU-2A)	Refer to Appendix E	VOCs, GCP, Metals, Pesticides, PCBs, TFH, SVOCs	VOCs, SVOCs, Metals, TFH, TRPH, Pesticides and PCBs	VOCs, Pesticides and PCBs, TFH, TRPH, SVOCs, Herbicides, Metals	Major Surface Water Drainages	Various	TBD

Notes:

Contaminant Abbreviations:

VOCs- Volatile Organic Compounds

TRPH- Total Recoverable Petroleum Hydrocarbons

SVOCs- Semivolatile Organic Compounds

PCBs- Polychlorinated Biphenyls

TFH- Total Fuel Hydrocarbons

GCP- General Chemistry Parameters.

(1) - Contaminants of Potential Concern (COPCs) identified in Phase II RI Work Plan. Contaminants listed for all on-site soil/sediment COPCs and all on-site and down Gradient groundwater COPCs.

(2) - Corresponds to Shallow Soil/Sediment Definitions in Phase II RI Work Plan.

(3) - Sites 24 and 25 will be investigated during Phase II of the RI/FS

(4) - COPCs for Downgradient locations only.

(5) - Indicates COPC for surface water only.

TBD- To Be Determined

Source:

Jacobs, 1993. MCAS El Toro, Phase II RI/FS Draft Work Plan.

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Table 6-2	
Human Health Standards	
MCAS El Toro BCP - March 1995	
Contaminant	Concentration Level (mg/l)

**Human health standards for IRP sites have not been established.
The standards will be determined during Phase II of the RI/FS.**

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Table 6-3 Surface Water Standards MCAS El Toro BCP - March 1995	
CONSTITUENT/PARAMETER	CONCENTRATION LIMIT/CRITERIA
Organics (ug/l):	
1,1,1-Trichloroethane	18,000 (k)
2-Butanone	NA
4,4'-DDE	0.001(e)
4,4'-DDT	0.001(e)
4-Nitrophenol	150 (c,f)
Acetone	NA
Benzyl butyl phthalate	3.0 (c,g)
Beta BHC	0.08 (c,h)
Bis(2-ethylhexyl)phthalate	360 (a)
Chloroform	1,240 (c)
Delta BHC	0.08 (c,h)
Endosulfan sulfate	0.056 (i)
Chlordane	0.0043 (j)
Methyl chloride	11,000 (l)
Methylene chloride	11,000 (c,k,l)
TFH-diesel	NA
Toluene	17,500 (c,k)
Inorganics (ug/L):	
Aluminum	87
Antimony	30 (a)
Arsenic	190(b)
Barium	NA
Beryllium	5.3c
Cadmium	3.6/1.2/2.5 (d)
Chromium	694/212/474 (b,d)
Cobalt	NA
Copper	42/12/28 (d)
Lead	20.9/3.3/11.5(d)
Manganese	NA
Mercury	0.012
Nickel	550/162/371 (d)
Selenium	5
Silver	0.12
Thallium	40 (c)
Vanadium	NA
Zinc	271/109/250 (d)

Table 6-3
Surface Water Standards
MCAS El Toro BCP - March 1995

CONSTITUENT/PARAMETER	CONCENTRATION LIMIT/CRITERIA
<p>Notes:</p> <ul style="list-style-type: none"> a - Proposed criterion. b - For the trivalent form. c - Data insufficient to develop criterion. Value is lowest observed effect level. d - Calculation of these water quality criteria are based on there levels of water hardness. Site specific hardness was estimated by summing calcium and magnesium concentrations to yield 438, 103, 275 mg/l as CaCO3 for sites 2, 3, and 25, respectively. Sites 2, 3, and 25 comprise all the surface runoff collection channels that flow through or adjacent to the Station. e - Criterion values for DDT refer to the sum of the p,p' and o,p' isomer of DDT, DDD, (TDE), and DDE f - Value listed is the generic criterion for nitrophenols. g - Value listed is the generic criterion for phthalate esters. h - Value listed is for technical BHC i - Value listed is for the sum of endosulfan-alpha, -beta, and endosulfan sulfate. j - Criteria levels for chlordane refer to the sum of alpha chlordane, gamma chlordane, nonachlor-alpha, nonachlor-gamma, and oxychlordane. Criteria are for 1-day average exposure. k - No chronic criterion was available, and the value listed is the acute criterion. l - Value listed is a generic criterion for halomethanes. <p>Sources:</p> <ul style="list-style-type: none"> (1) USEPA Quality Criteria for Water, 1992 (2) Amendments of the Water Quality Control Plan for Inland Surface Waters of California, Functional Equivalent Document, California State Water Resources Control Board, November 1992 	

Appendix A
FISCAL YEAR FUNDING REQUIREMENTS/COSTS

Appendix A**Fiscal Year Funding Requirements**

Costs associated with implementation of programs for environmental restoration of MCAS El Toro are being developed by U.S. COST, INC. Tables (A-1 through A-4) summarizing these costs will be inserted to this appendix when available. Cost data will be provided for the Installation Restoration Program, compliance program, and natural/cultural resources activities. In addition, a tabulation of total costs associated with these programs will be provided.

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Table A-5
Historical Expenditures by Site by OU Funds
MCAS El Toro BCP - March 1995

OU	Site	Site Description (1)	IRP Phases	FY 1985 (\$000)	FY 1986 (\$000)	FY 1987 (\$000)	FY 1988 (\$000)	FY 1989 (\$000)	FY 1990 (\$000)	FY 1991 (\$000)	FY 1992 (\$000)	FY 1993 (\$000)	FY 1994 (\$000)	Total (\$000)
OU-1	18		PA	3.7			1.4							5.1
			SI			846.1	465.0	400.1						1711.2
			RI/FS					1.1	102.4	43.0	976.0	2000.0	922.4	4044.9
			RD									797.0	591.4	1388.4
OU-2A	24		PA											
			SI											
			RI/FS										3201.8	3201.8
	25		PA											
			SI											
			RI/FS										3201.8	3201.8
OU-2B	2		PA	3.7			2.3							6.0
			SI				7.4	38.6						46.0
			RI/FS					1.1	12.3	27.0	857.0	98.2	1686.6	2682.2
	17		PA	3.7			1.4							5.1
			SI				7.4	38.6						46.0
			RI/FS					1.1	12.3	27.0	857.0	98.2	1686.6	2682.2

Table A-5
Historical Expenditures by Site by OU Funds
MCAS El Toro BCP - March 1995

OU	Site	Site Description (1)	IRP Phases	FY 1985 (\$000)	FY 1986 (\$000)	FY 1987 (\$000)	FY 1988 (\$000)	FY 1989 (\$000)	FY 1990 (\$000)	FY 1991 (\$000)	FY 1992 (\$000)	FY 1993 (\$000)	FY 1994 (\$000)	Total (\$000)
OU-2C	3		PA	3.7			1.4							5.1
			SI				7.4	38.6						46.0
			RI/FS					1.1	12.3	27.0	857.0	98.2	1686.6	2682.2
	5		PA	3.7			1.4							5.1
			SI				7.4	38.6						46.0
			RI/FS					1.1	12.3	27.0	857.0	98.2	1686.6	2682.2
	10		PA	3.4			1.4							4.8
			SI											
			RI/FS					1.1	12.3	27.0	857.0	98.2	76.6	1072.2
OU-3A	1		PA	3.7			1.4							5.1
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	1072.1
	6		PA	3.4			1.4							4.8
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	1072.1
	7		PA	3.4			1.4							4.8
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	1072.1
	8		PA				1.4							1.4
			RI/FS					1.1	12.2	27.0	857.0	98.2	88.1	1083.6

Table A-5
Historical Expenditures by Site by OU Funds
MCAS El Toro BCP - March 1995

OU	Site	Site Description (1)	IRP Phases	FY 1985 (\$000)	FY 1986 (\$000)	FY 1987 (\$000)	FY 1988 (\$000)	FY 1989 (\$000)	FY 1990 (\$000)	FY 1991 (\$000)	FY 1992 (\$000)	FY 1993 (\$000)	FY 1994 (\$000)	Total (\$000)
OU-3A (cont.)	9		PA	3.7			1.4							5.1
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	1072.1
	11		PA	3.7			1.4							5.1
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	1072.1
	12		PA				1.4							1.4
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	1072.1
	14		PA	3.7			1.4							5.1
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	1072.1
	15		PA	3.7			1.4							5.1
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	1072.1
	16		PA				1.4							1.4
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	1072.1
	19		PA				1.4							1.4
			SI				16.4							16.4
			RI/FS					1.1	13.0	27.0	857.0	98.2	76.6	1072.9
	20		RI/FS						13.0	27.0	857.0	98.2	76.6	1071.8
	21		RI/FS						13.0	27.0	857.0	98.2	76.6	1071.8
	22		RI/FS						13.0	27.0	857.0	98.2	76.6	1071.8
	23		SI							1.2	32.0	20.0		53.2

Table A-5
Historical Expenditures by Site by OU Funds
MCAS El Toro BCP - March 1995

OU	Site	Site Description (1)	IRP Phases	FY 1985 (\$000)	FY 1986 (\$000)	FY 1987 (\$000)	FY 1988 (\$000)	FY 1989 (\$000)	FY 1990 (\$000)	FY 1991 (\$000)	FY 1992 (\$000)	FY 1993 (\$000)	FY 1994 (\$000)	Total (\$000)
OU-3B	4		PA				1.4							1.4
			SI				6.3							6.3
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	1072.1
	13		PA	3.4			1.4							4.8
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	1072.1

Notes:

(1) Refer to Chapter 4 for descriptions of the IRP sites.

OU	Site	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
OU-1		PA		SI	HRS SI	SI RI	RI	RI	RI	RI FS	RI FS
	18	■		■	■ ■	■ ■	■	■	■	■ ■	■ ■
OU-2A											RI
	24										■
	25										■
OU-2B		PA			HRS SI	SI RI	RI	RI	RI	RI	RI
	2	■			■ ■	■ ■	■	■	■	■	■
	17	■			■ ■	■ ■	■	■	■	■	■
OU-2C		PA			HRS SI	SI RI	RI	RI	RI	RI	RI
	3	■			■ ■	■ ■	■	■	■	■	■
	5	■			■ ■	■	■	■	■	■	■
OU-3A		PA			HRS	RI	RI	RI	RI	RI	RI
	1	■			■	■	■	■	■	■	■
		PA			HRS	RI	RI	RI	RI	RI	RI
	6	■			■	■	■	■	■	■	■
		PA			HRS	RI	RI	RI	RI	RI	RI
	7	■			■	■	■	■	■	■	■
	8				■	■	■	■	■	■	■
	9	■			■	■	■	■	■	■	■

Legend
PA Preliminary Assessment
SI Site Inspection
SI* Investigated in RFA
RI Remedial Investigation
FS Feasibility Study
HRS Hazard Ranking System
Scoring

Figure A-1
Past Restoration Schedule
MCAS El Toro BCP - March 1995
(Page 1 of 2)

OU	Sites	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
OU-3A (cont'd)	10	PA			HRS	RI	RI	RI	RI	RI	RI
	11	PA			HRS	RI	RI	RI	RI	RI	RI
	12				HRS	RI	RI	RI	RI	RI	RI
	14	PA			HRS	RI	RI	RI	RI	RI	RI
	15	PA			HRS	RI	RI	RI	RI	RI	RI
	16				HRS	RI	RI	RI	RI	RI	RI
	19				HRS SI	RI	RI	RI	RI	RI	RI
	20						RI	RI	RI	RI	RI
	21						RI	RI	RI	RI	RI
	22						RI	RI	RI	RI	RI
OU-3B	4				HRS SI	RI	RI	RI	RI	RI	RI
	13	PA			HRS	RI	RI	RI	RI	RI	RI

Legend	
PA	Preliminary Assessment
RI	Remedial Investigation
SI	Site Inspection
SI*	Investigated in RFA
FS	Feasibility Study
HRS	Hazard Ranking System
	Scoring

Figure A-1
Past Restoration Schedule
MCAS El Toro BCP - March 1995
 (Page 2 of 2)

Appendix B
INSTALLATION ENVIRONMENTAL
RESTORATION DOCUMENTS SUMMARY TABLES

**Table B-1
Project Deliverables
MCAS El Toro BCP - March 1995**

Year	Phase	Project Title	Report No.	Sites Examined	Deliverable Date/Author
1986	PA	Initial Assessment Study for MCAS El Toro, California	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17	May 1986 - Brown and Caldwell Engineers
1988	SI	Site Inspection Plan of Action, Installation Restoration Program, MCAS Tustin and El Toro, California	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19	August 1988 - James M. Montgomery Engineers
1989	SI	Perimeter Investigation Interim Report, MCAS El Toro, Installation Restoration Program	3	18	April 1989 - James M. Montgomery Engineers
February 1990 - MCAS El Toro Placed on National Priorities List (NPL)					
1990	SI	Solid Waste Air Quality Assessment Test Report, MCAS El Toro, California, Communications Station Landfill Inactive Disposal Site	4	17	October 1990a - James M. Montgomery Engineers
1990	SI	Solid Waste Air Quality Assessment Test Report, MCAS El Toro, California, Perimeter Road Landfill Inactive Disposal Site	5	5	October 1990b - James M. Montgomery Engineers
1990	SI	Solid Waste Air Quality Assessment Test Report, MCAS El Toro, California, Magazine Road Landfill Inactive Disposal Site	6	2	October 1990c - James M. Montgomery Engineers
1990	SI	Solid Waste Air Quality Assessment Test Report, MCAS El Toro, California, Original Landfill Inactive Disposal Site	7	3	October 1990d - James M. Montgomery Engineers

Table B-1 Project Deliverables MCAS El Toro BCP - March 1995					
Year	Phase	Project Title	Report No.	Sites Examined	Deliverable Date/Author
1991	FS	Groundwater Model Simulations to Investigate Well Field Scenarios for the Irvine Desalter Project	8	18	April 1991 - Orange County Water District
1993	PA/SI	Final RCRA Facility Assessment Report, MCAS El Toro	9	3, 12 (1)	July 1993 - Jacobs Engineering Group Inc. (CLEAN I)
1993	RI	MCAS El Toro Phase I RI Technical Memorandum	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22	May 1993 - Jacobs Engineering Group Inc. (CLEAN I)
1994	RI	MCAS El Toro Soil Gas Survey Technical Memorandum Sites 24 and 25	11	24, 25	October 1994 - Jacobs Engineering Group Inc. (CLEAN I)
Notes: (1) Three SWMUs/AOCs were added to the IRP based on the RFA sampling results: SWMUs/AOCs 194 (Former Incinerator) and 300 (Solvent Spill Area) were included in Site 3; SWMU/AOC 90 (Former Sewage Treatment Plant) was included in Site 12 (refer to Draft Phase II RI Work Plan) (Jacobs, 1993b).					

Table B-2 Site Deliverables MCAS El Toro BCP - March 1995						
Site ID	PA/SI	RI/FS	Close Out	IRA	LTM	NRAP
1	1, 2	10				
2	1, 2, 6	10				
3	1, 2, 7, 9	10				
4	1, 2	10				
5	1, 2, 5	10				
6	1, 2	10				
7	1, 2	10				
8	1, 2	10				
9	1, 2	10				
10	1, 2	10				
11	1, 2	10				
12	1, 2, 9	10				
13	1, 2	10				
14	1, 2	10				
15	1, 2	10				
16	1, 2	10				
17	1, 2, 4	10				
18	2, 3	8				
19	2	10				
20	(a)	10				
21	(a)	10				
22	(a)	10				
23	9					
24	(a)	11				
25	(a)	10 (b), 11				
Notes: (a) PA/SI was not performed for Sites 20, 21, 22, 24, and 25. (b) Site 25 (Station Washes) was evaluated as part of Site 18 (Regional Groundwater Investigation) in the Phase I RI (Jacobs, 1993a). The deliverable numbers in this table correspond to the report numbers in Table B-1.						

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Table B-3 Technical Documents/Data Loading Status Summary MCAS El Toro BCP - March 1995					
Date	IRP Title	Site/OU	Contractor	Service Center	Database Status (a)
Notes:					
(a) At this time, the software to be used for the master database for MCAS El Toro is not known.					

Information will be input to Table B-3 when a master database for MCAS El Toro IRP information is established. This table will be regularly updated based on current data loading activities and status.

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Section B.1

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Appendix C
DECISION DOCUMENT/ROD SUMMARIES

Appendix C

Decision Document/ROD Summaries

The purpose of Appendix C is to provide documentation of records of decision (RODs) for the Installation Restoration Program (IRP) sites at MCAS El Toro. As of March 1995, no RODs have been prepared for the IRP sites at MCAS El Toro. As RODs are prepared for sites at the Station, documentation will be included in this appendix.

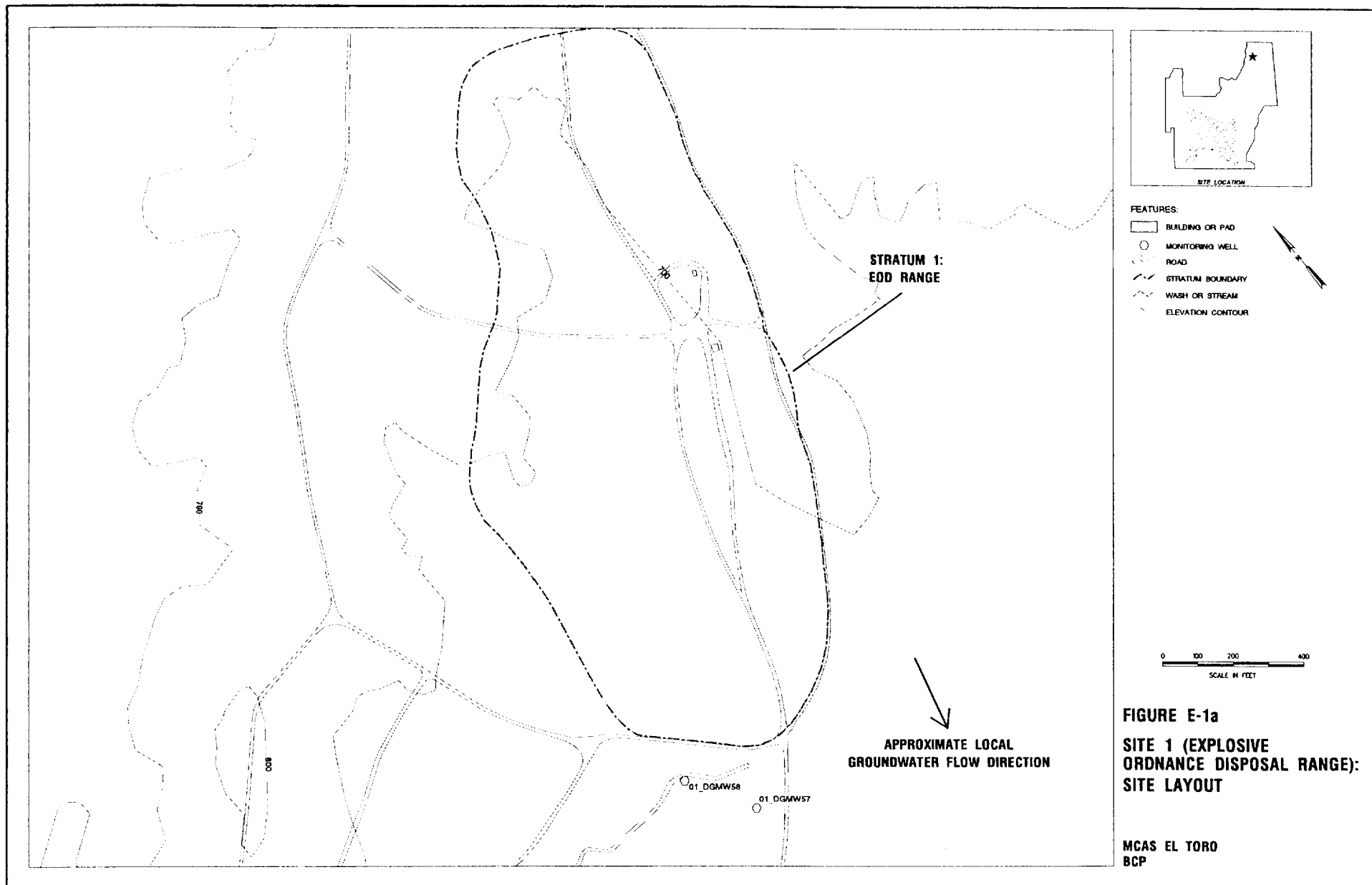
It is anticipated that an interim ROD for OU-1 (Site 18 - Regional Groundwater Investigation) will be completed by December 1995. At that time, an abstract of the ROD should be added to this appendix.

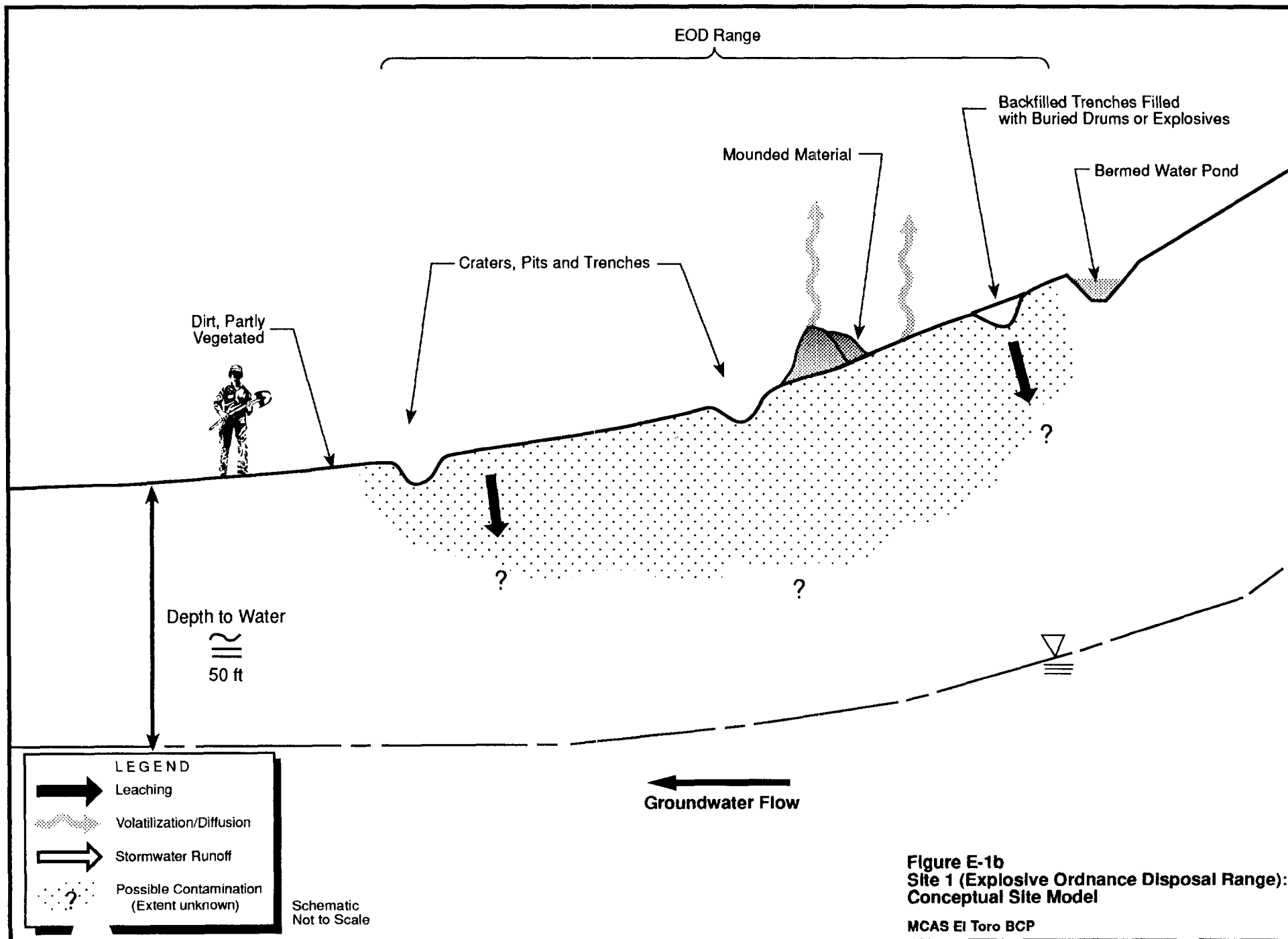
Appendix D
NO FURTHER RESPONSE ACTION PLANNED (NFRAP) SUMMARIES

Appendix D**No Further Response Action Planned Summaries**

The purpose of Appendix D is to provide documentation of no further response action planned (NFRAP) decisions for the Installation Restoration Program (IRP) sites at MCAS El Toro. As of March 1995, no NFRAP determinations have been made for the IRP sites at MCAS El Toro. As such determinations are made for sites at the Station, documentation will be included in this appendix.

Appendix E
CONCEPTUAL SITE MODELS





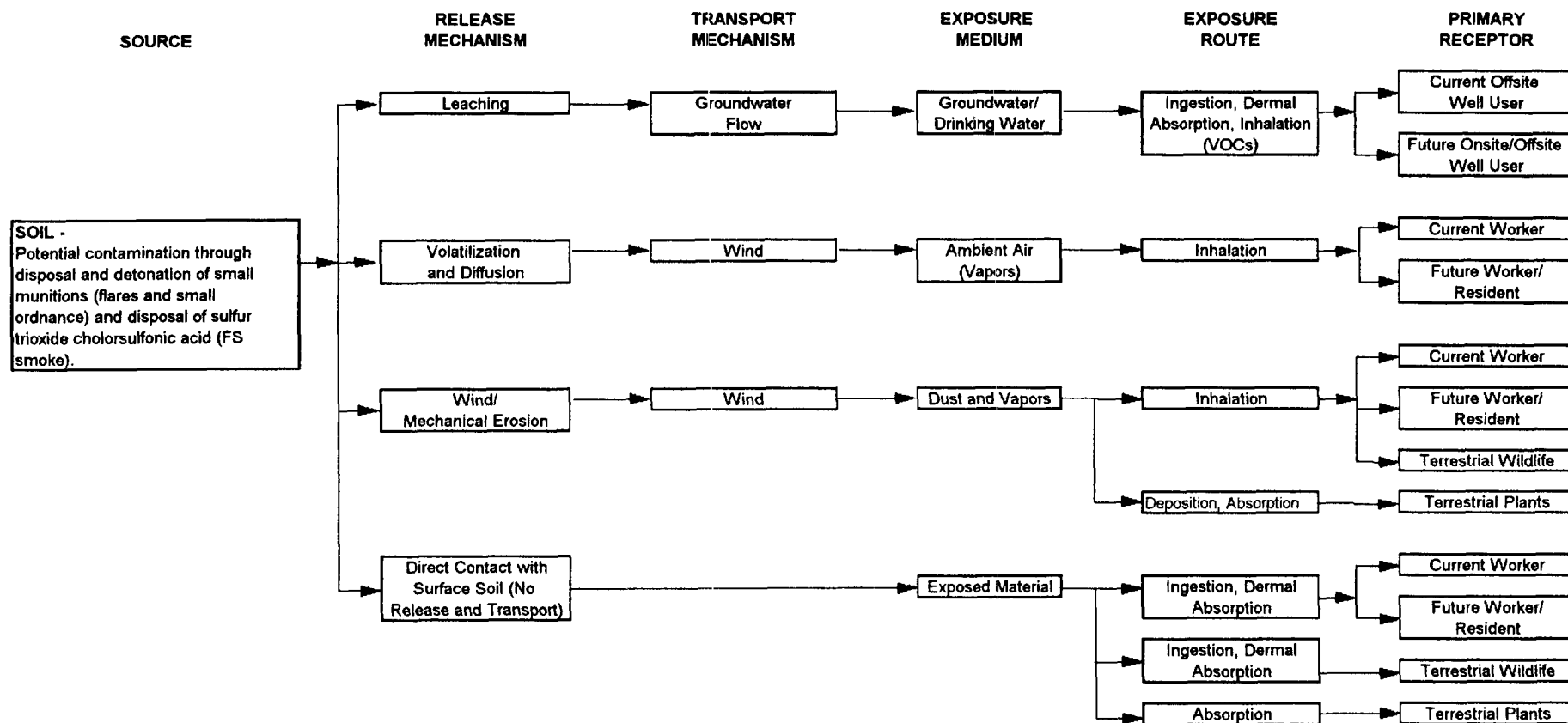
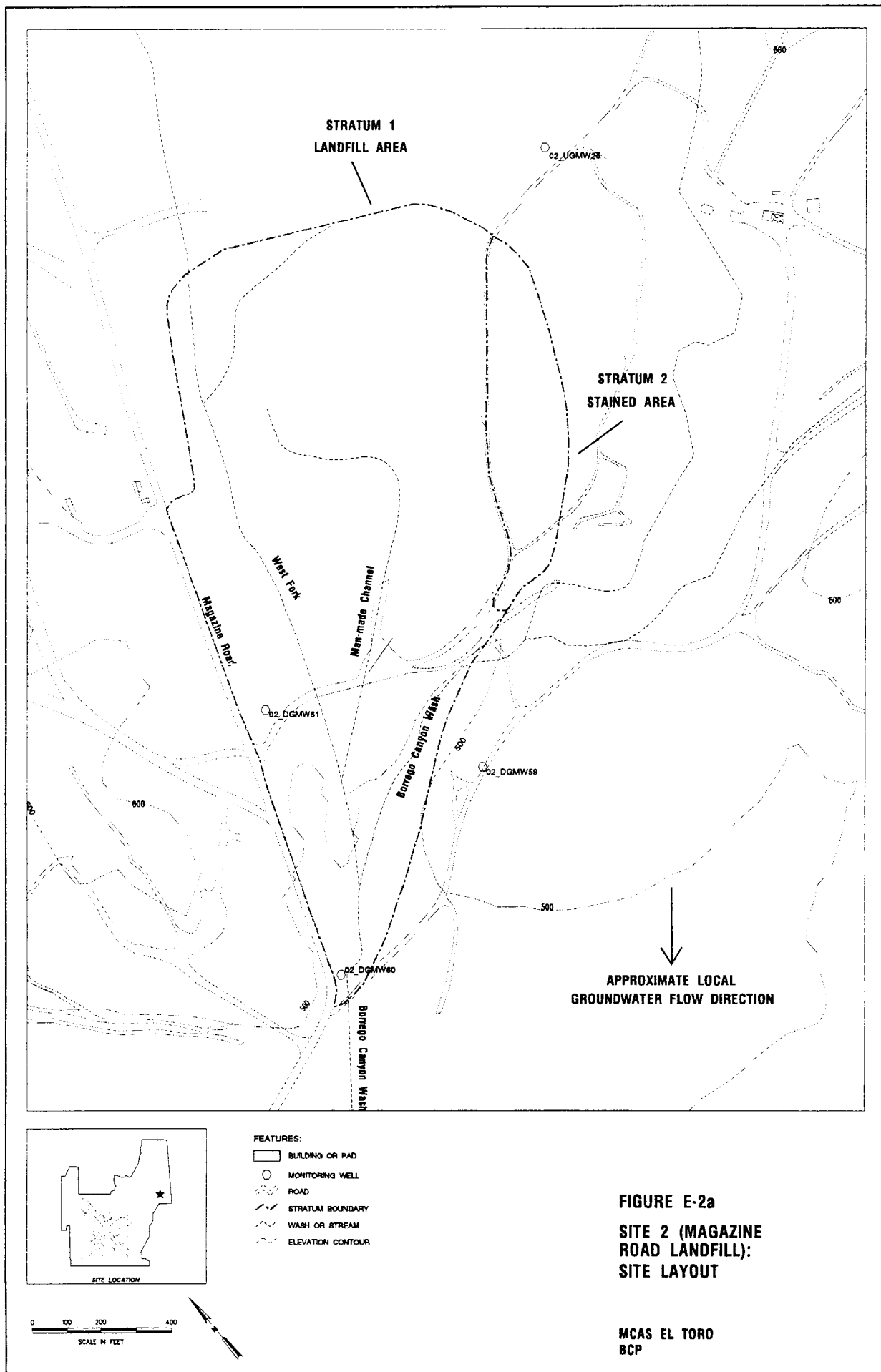
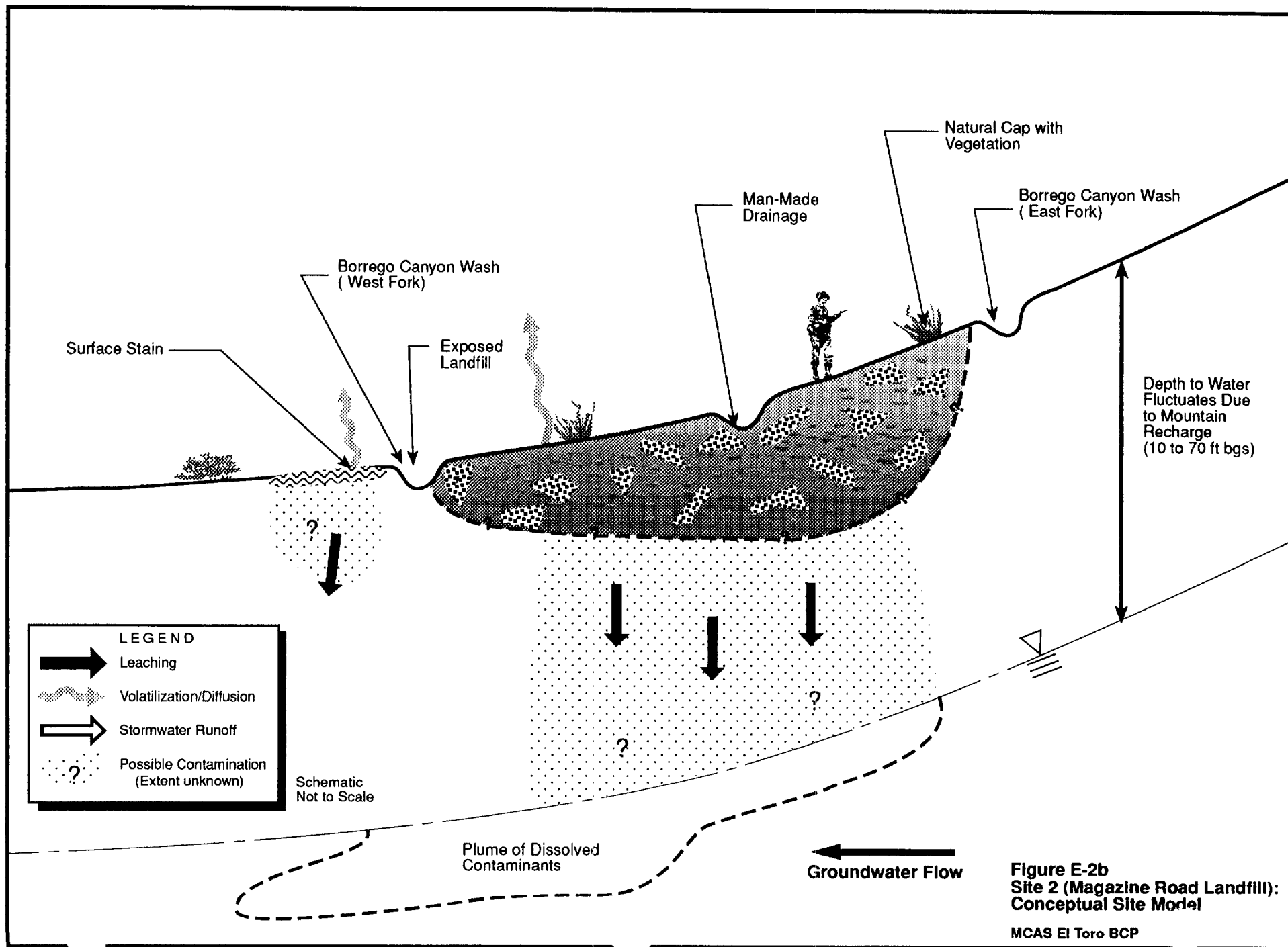


Figure E-1c
Site 1 (Explosive Ordnance Disposal Range):
Potential Exposure Routes and Pathways for Human and Ecological Receptors
MCAS El Toro BCP





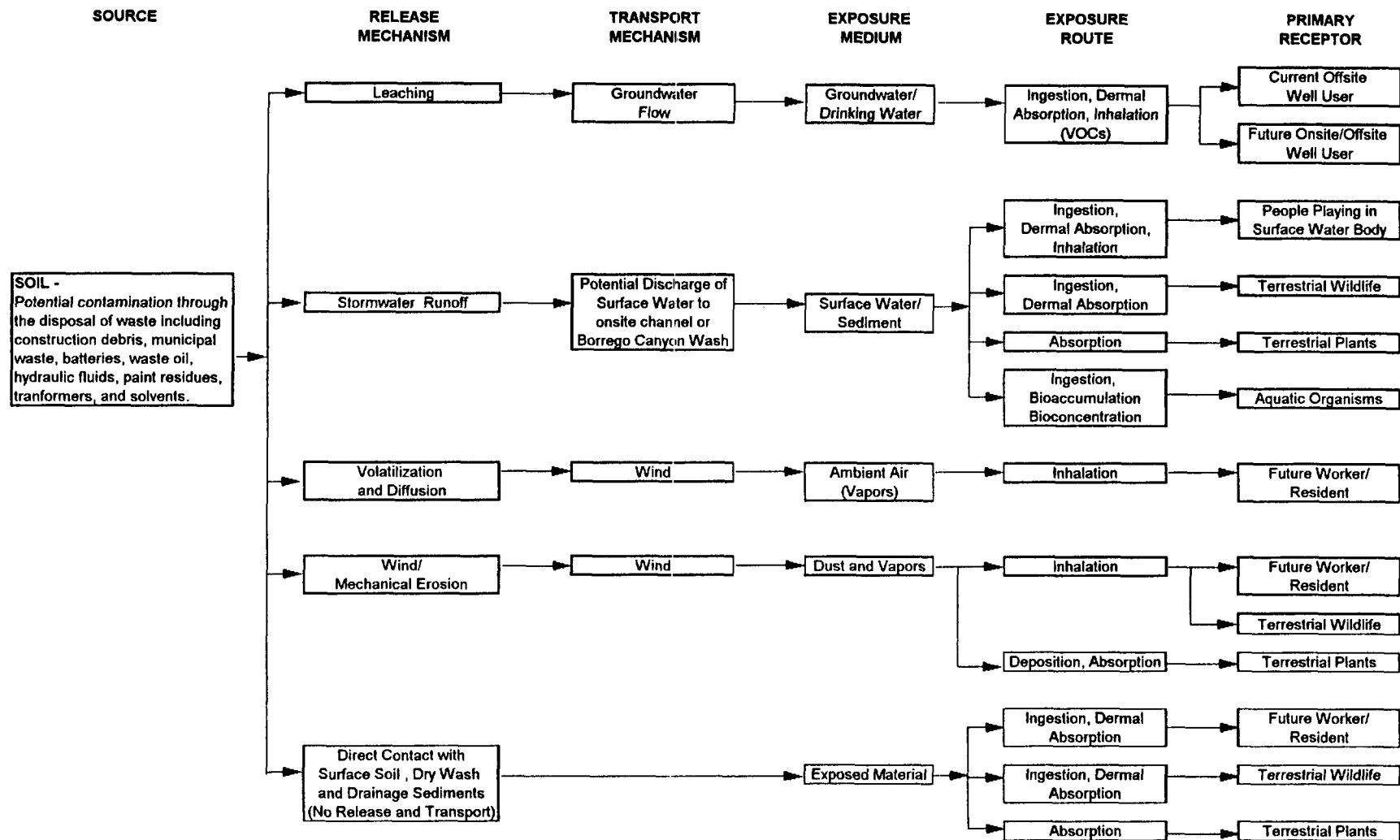
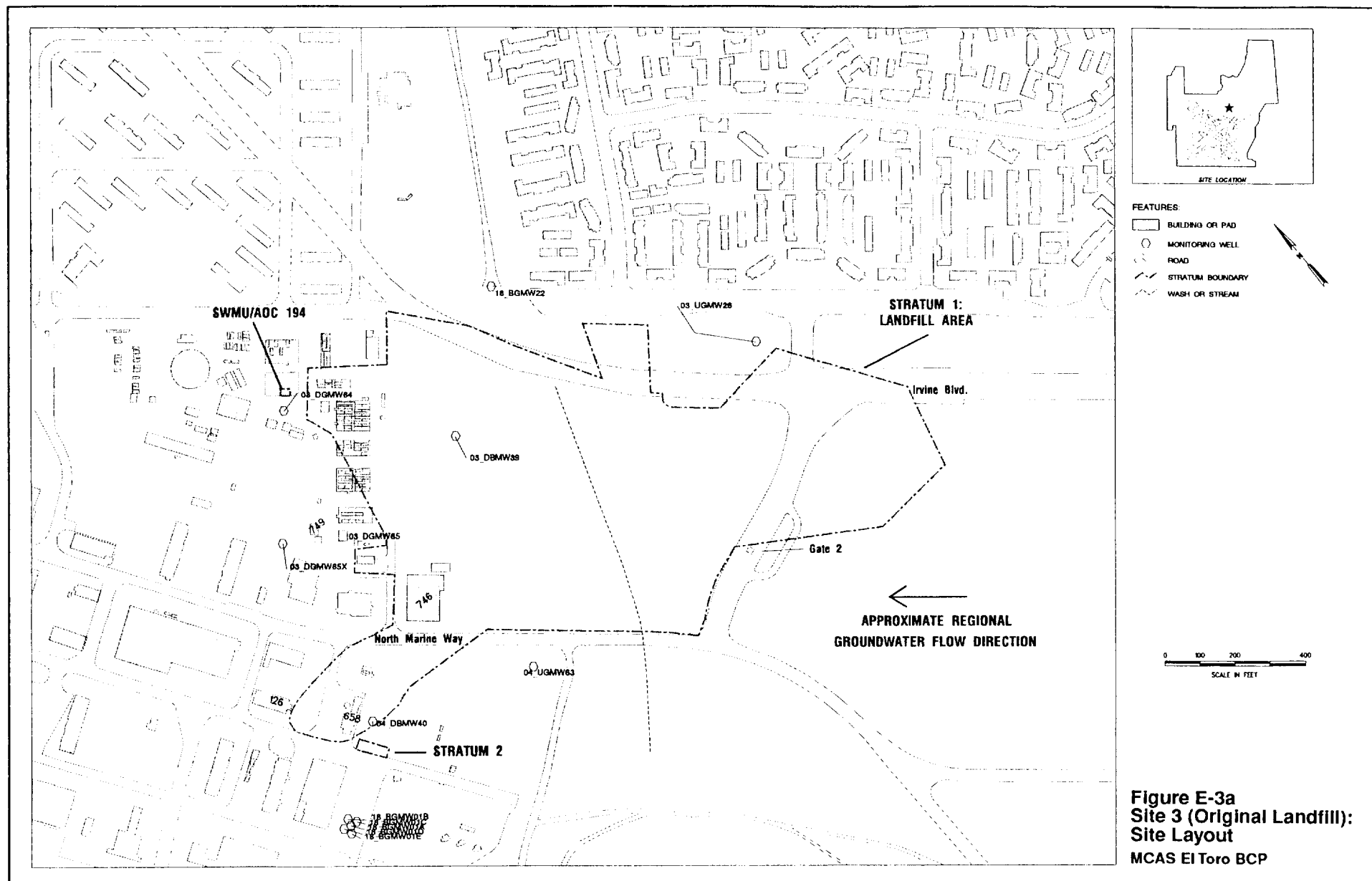
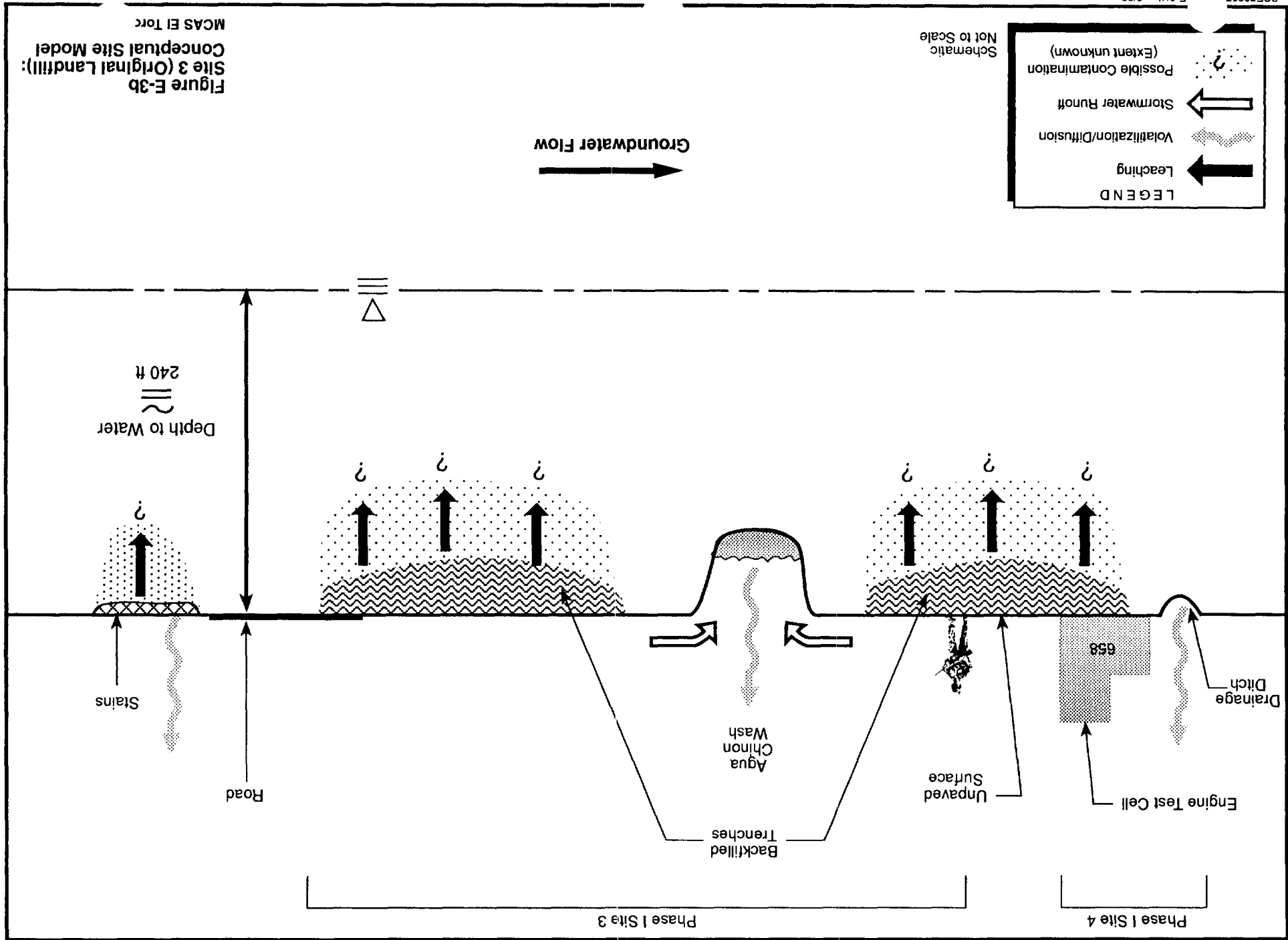


Figure E-2c
Site 2 (Magazine Road Landfill):
Potential Exposure Routes and Pathways for Human and Ecological Receptors
MCAS El Toro BCP





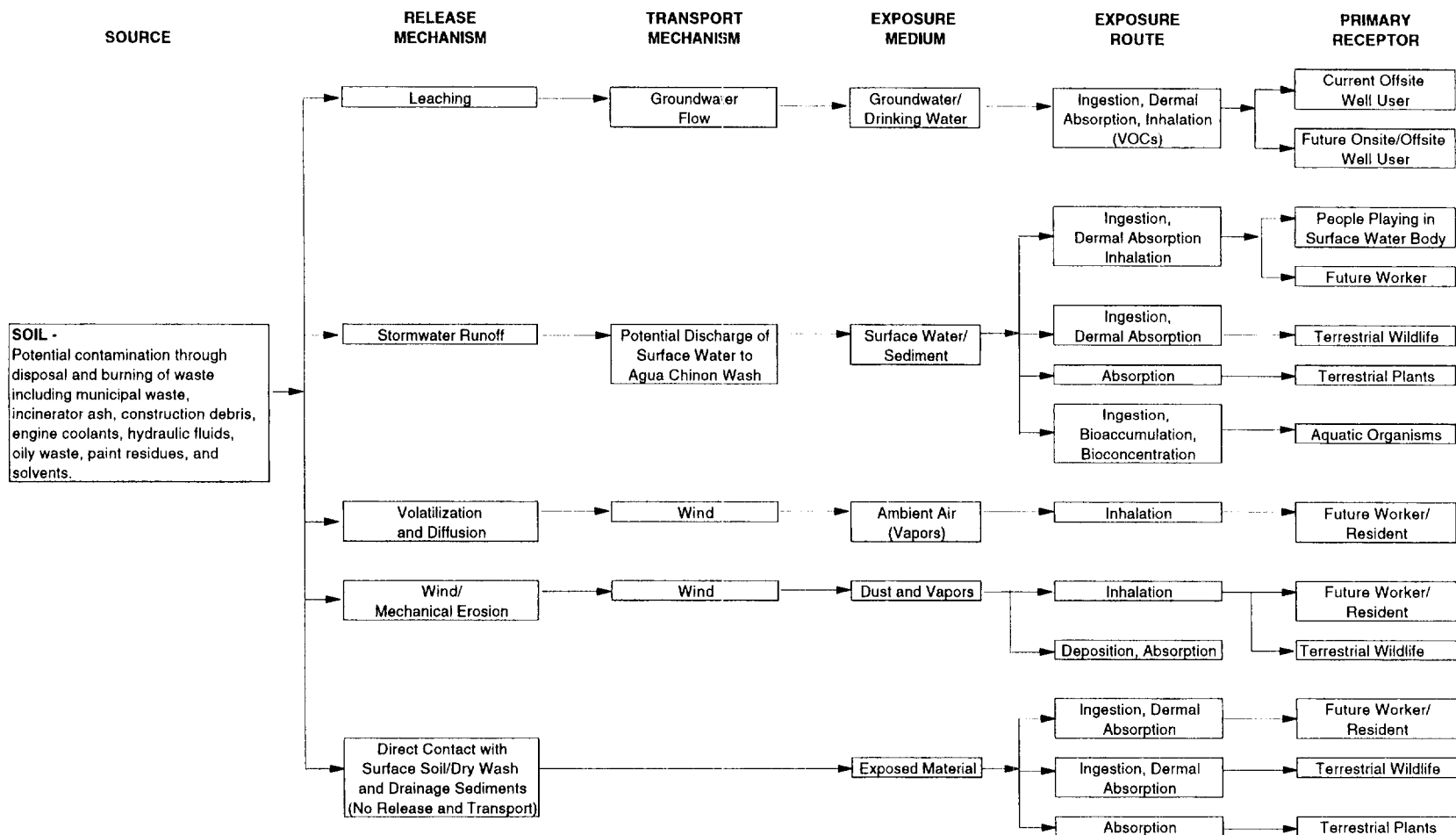


Figure E-3c
Site 3 (Original Landfill):
Potential Exposure Routes and Pathways for Human and Ecological Receptors
 MCAS El Toro BCP

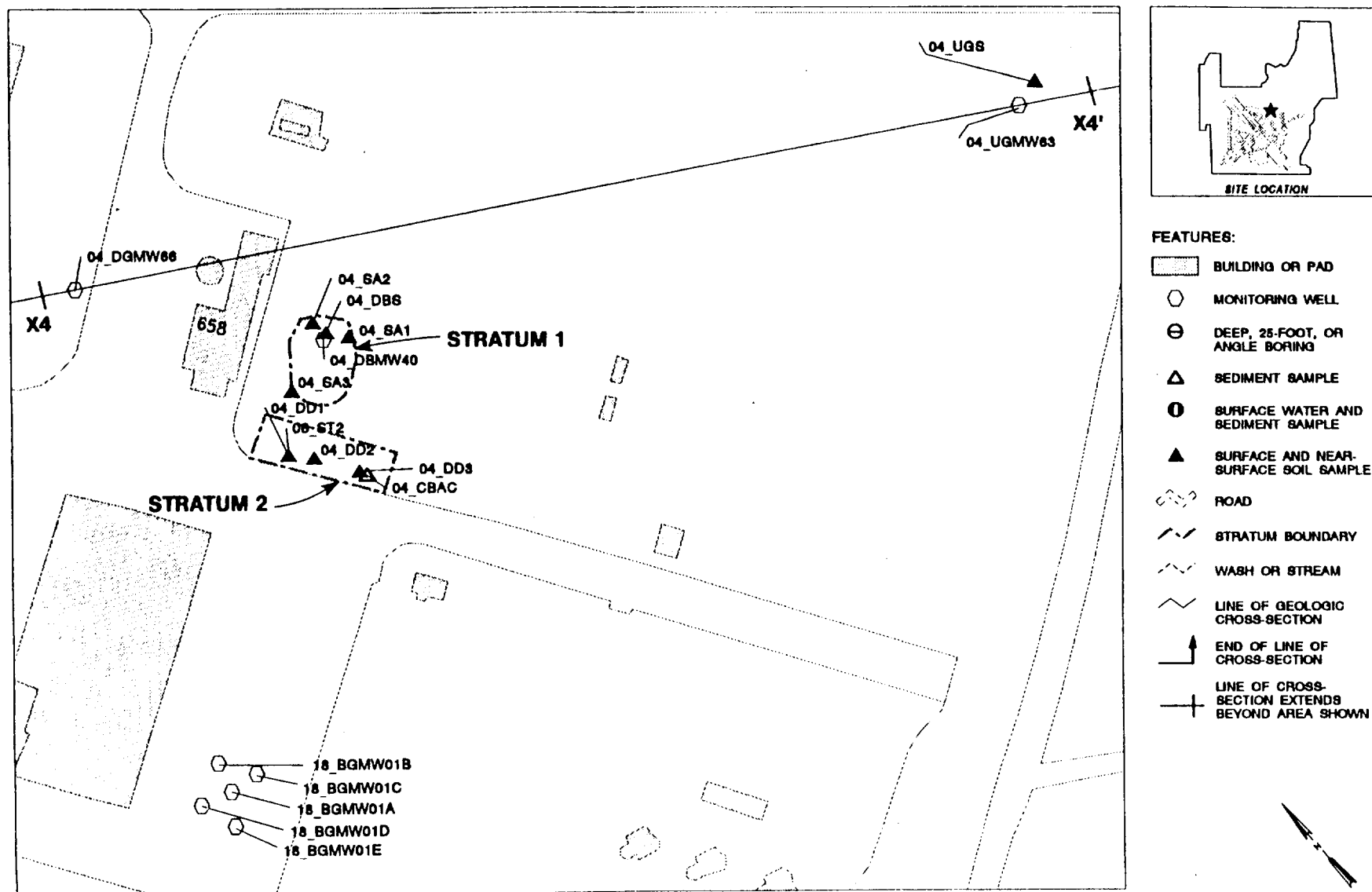


Figure E-4a
Site 4 (Ferrocene Spill Area):
MCAS El Toro BCP

0 50 100 200
 SCALE IN FEET

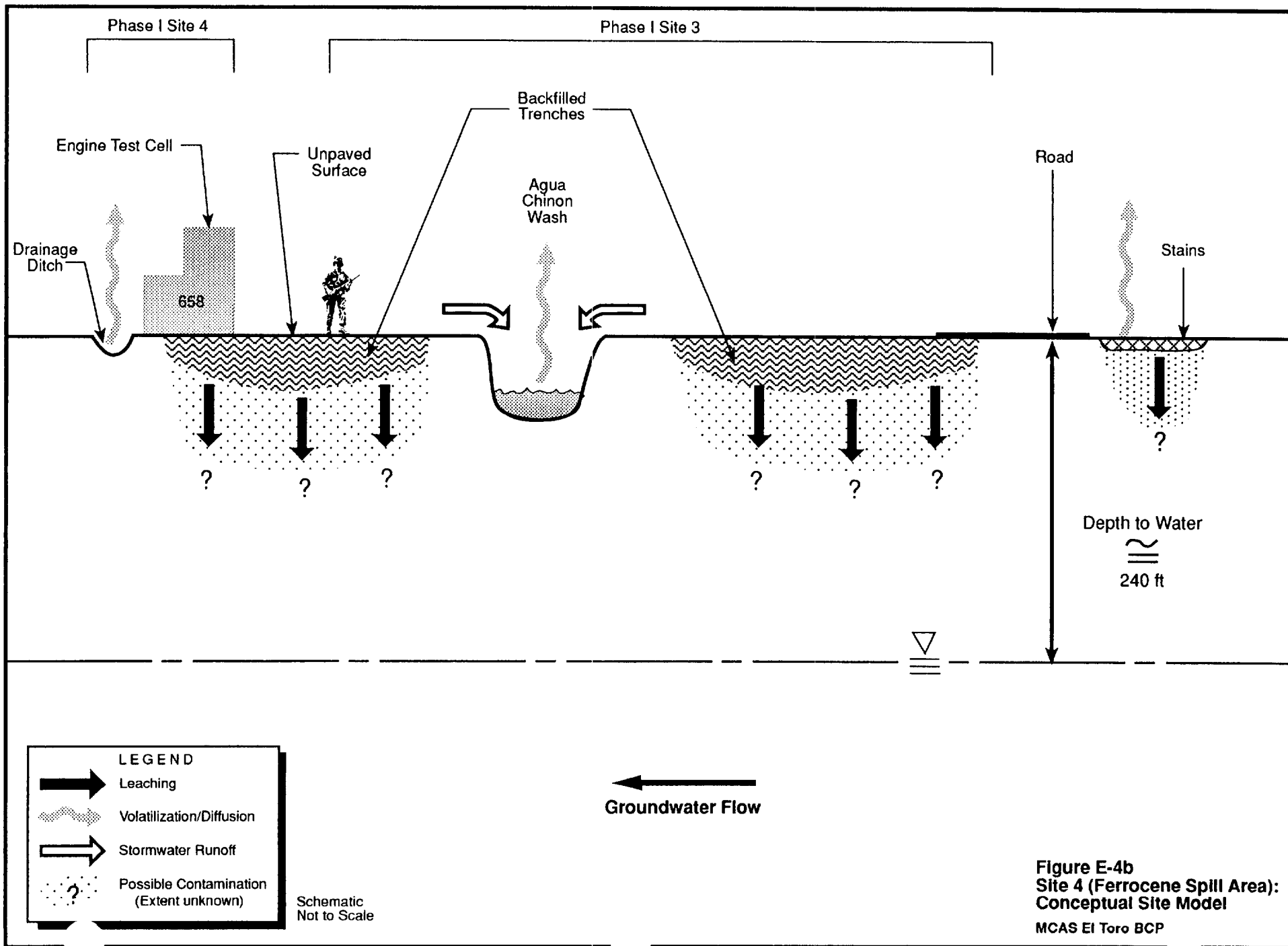


Figure E-4b
Site 4 (Ferrocene Spill Area):
Conceptual Site Model
 MCAS El Toro BCP

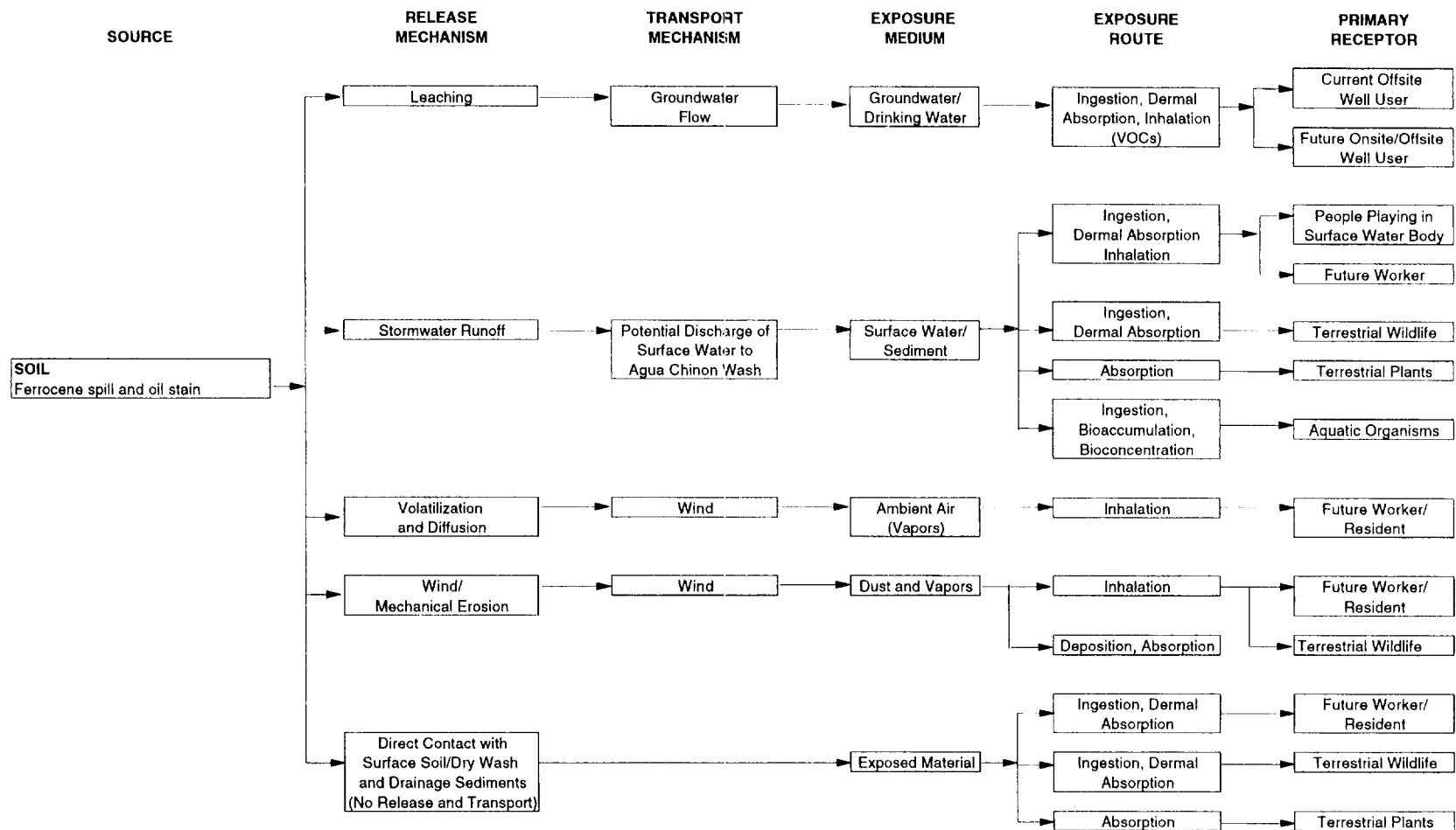
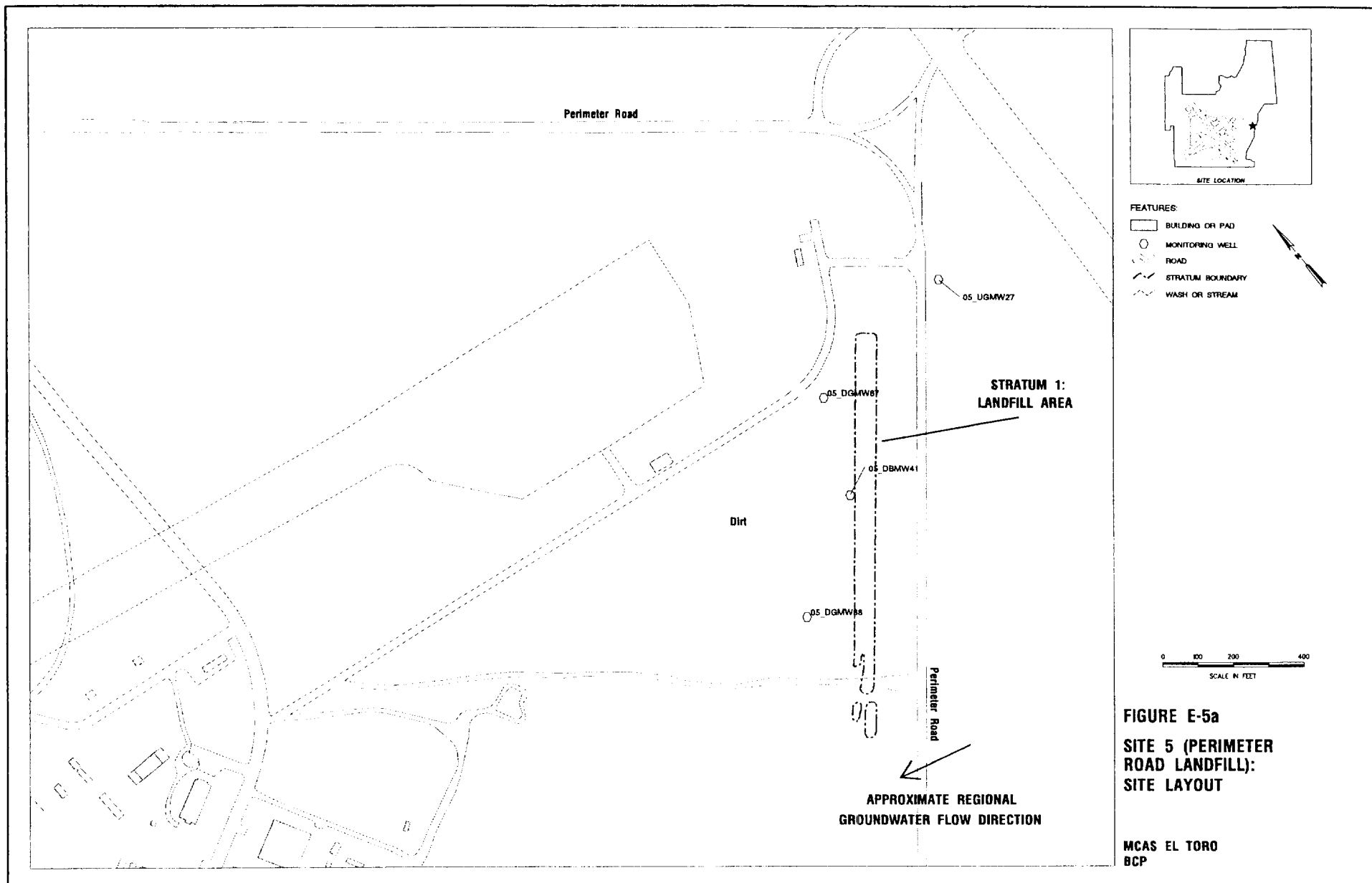
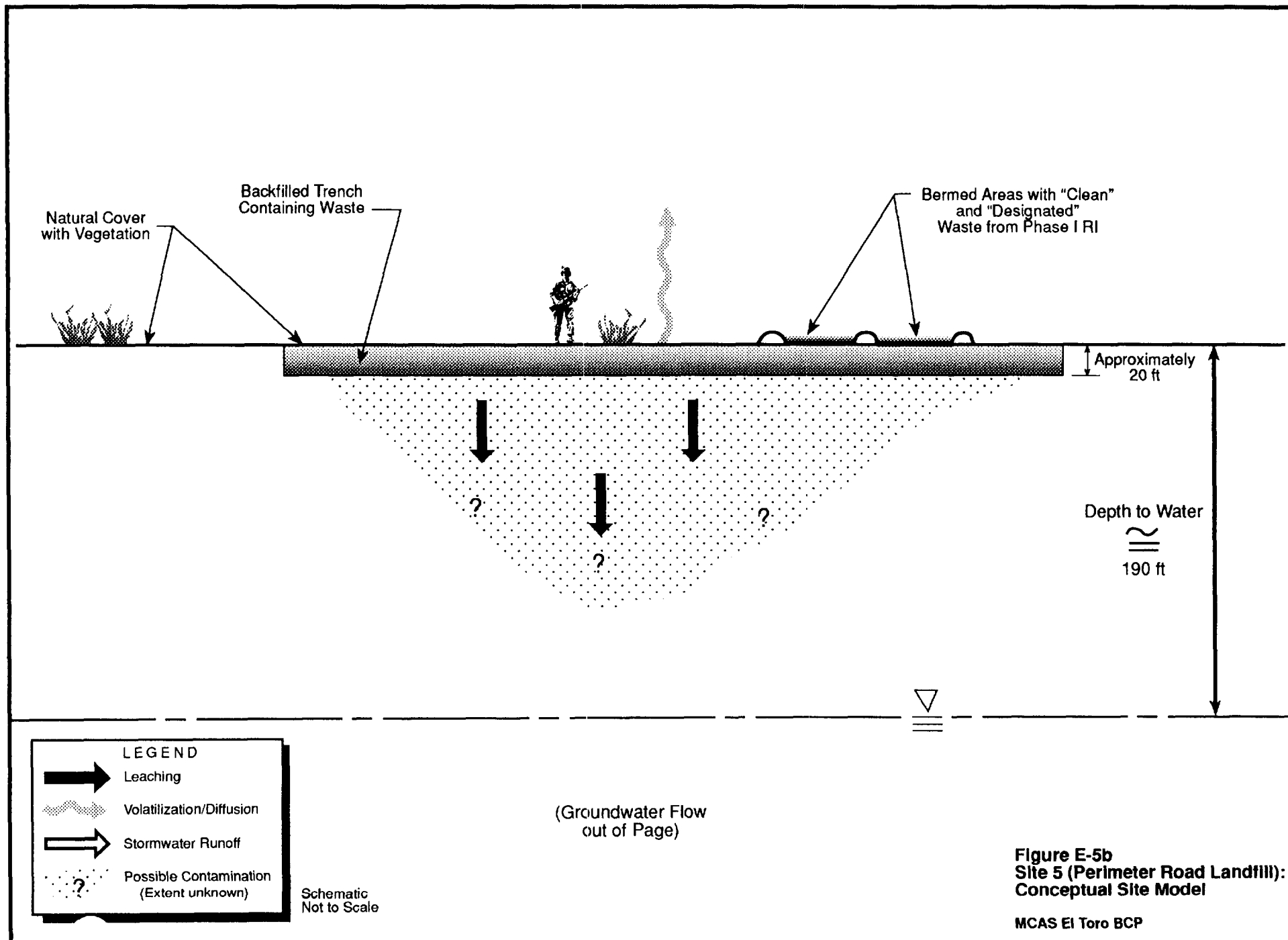


Figure E-4c
Site 4 (Ferrocene Spill Area):
Potential Exposure Routes and Pathways for Human and Ecological Receptors
 MCAS El Toro BCP





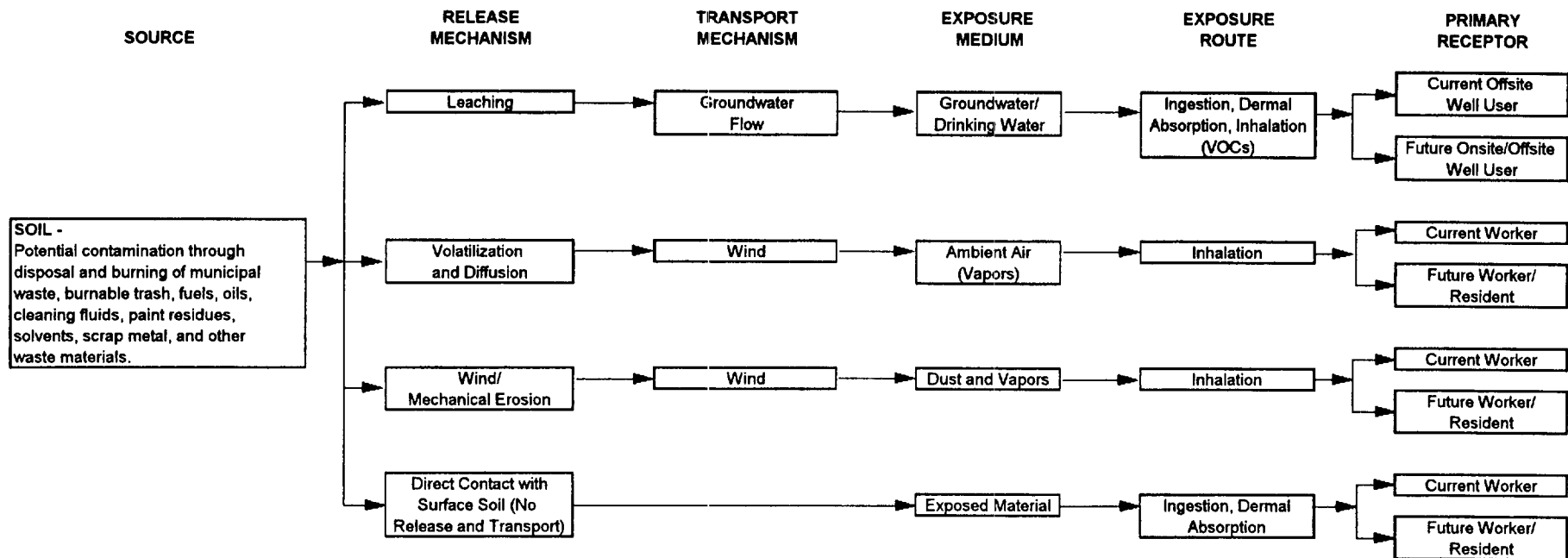
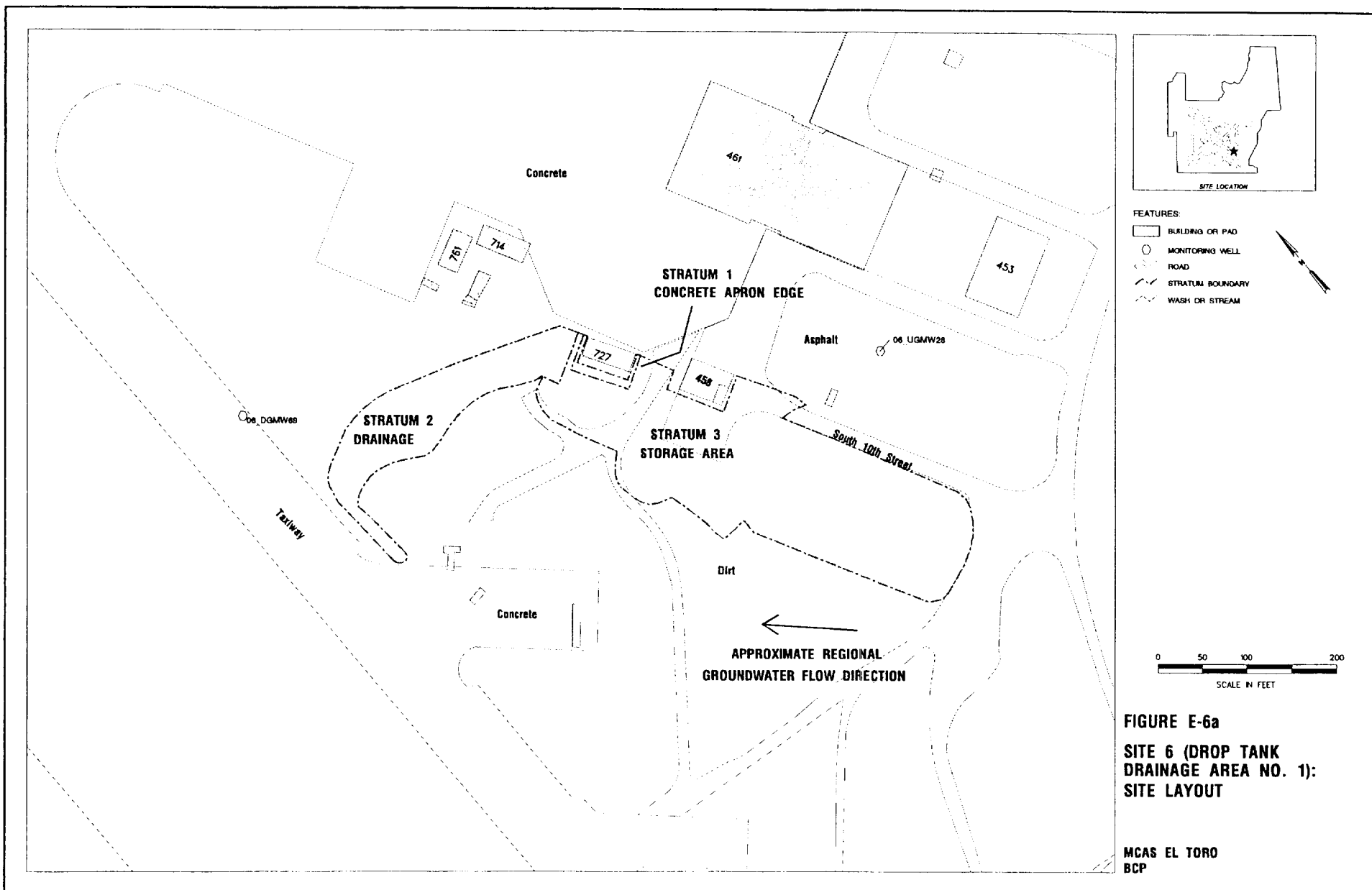


Figure E-5c
 Site 5 (Perimeter Road Landfill):
 Potential Exposure Routes and Pathways for Human Receptors
 MCAS El Toro BCP



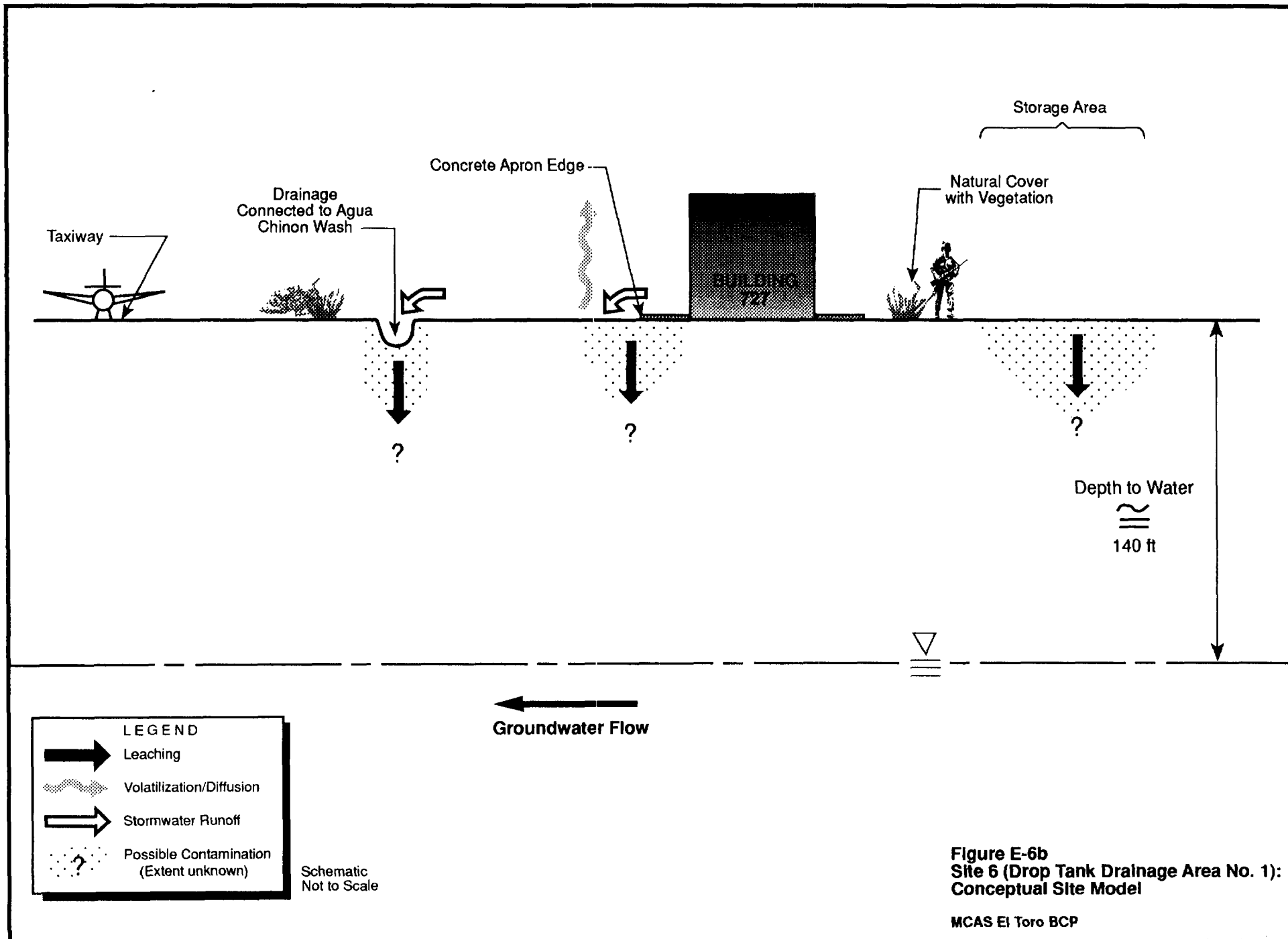


Figure E-6b
Site 6 (Drop Tank Drainage Area No. 1):
Conceptual Site Model

MCAS El Toro BCP

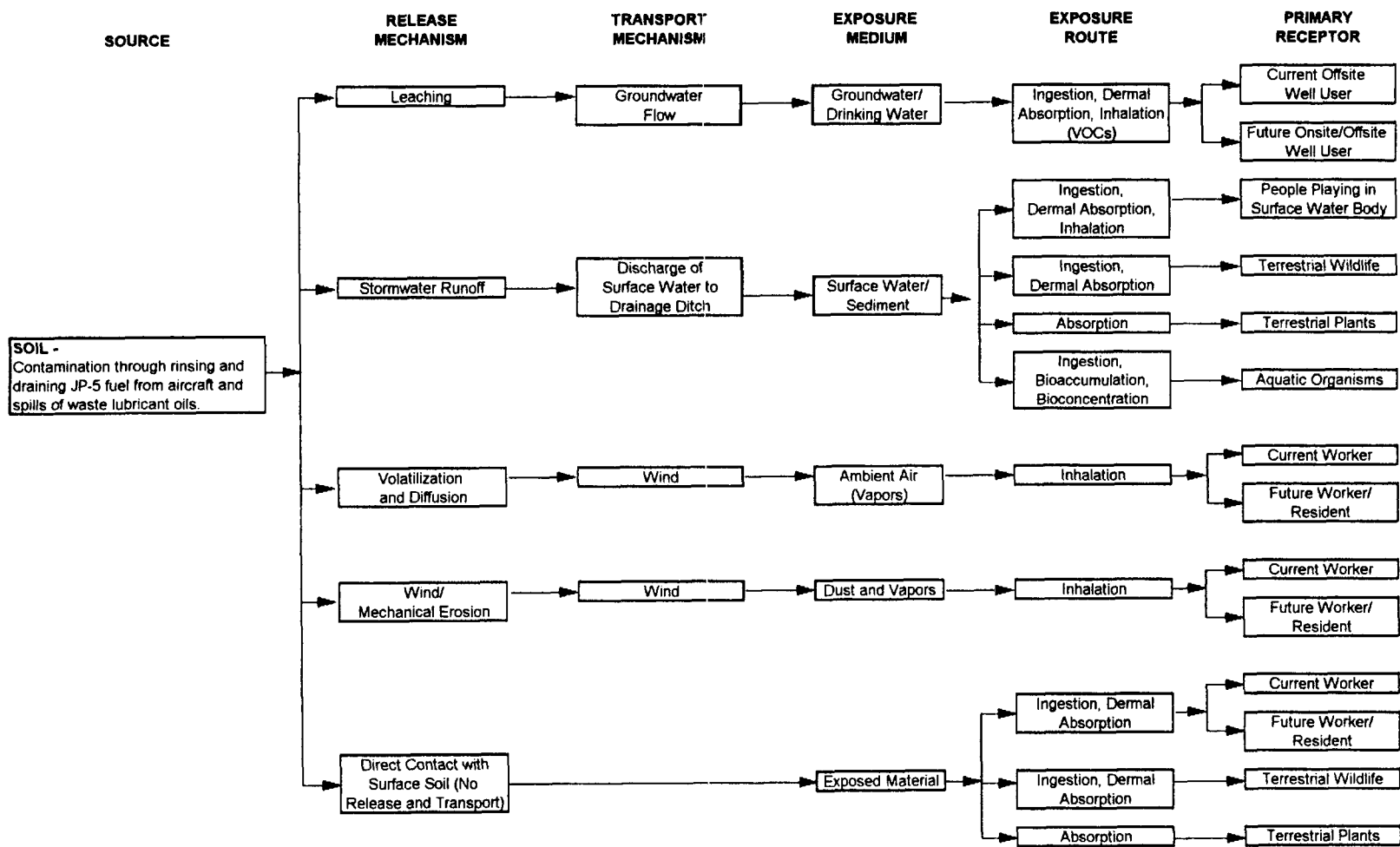
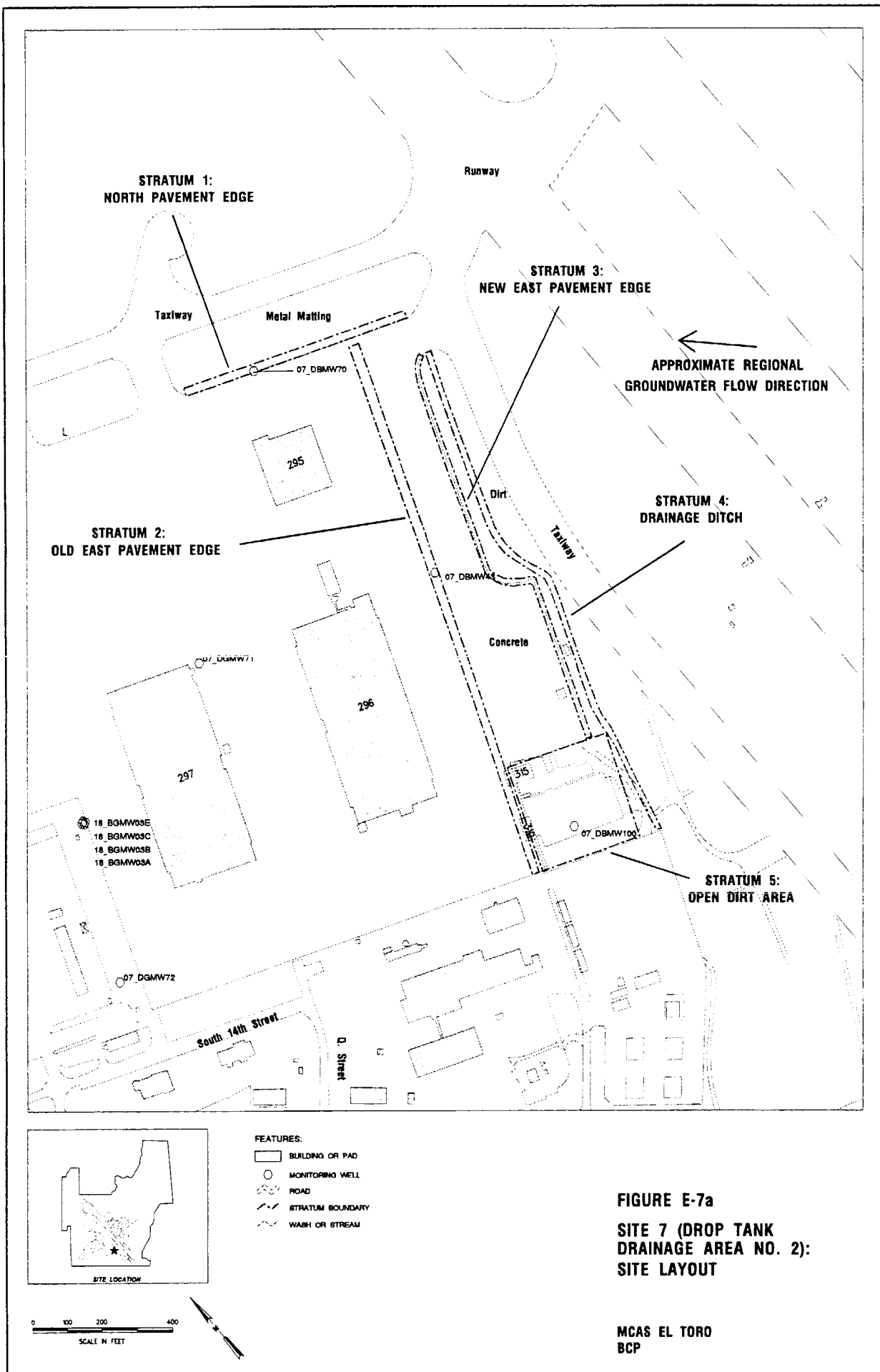


Figure E-6c
Site 6 (Drop Tank Drainage Area No.1):
Potential Exposure Routes and Pathways for Human and Ecological Receptors
MCAS El Toro BCP



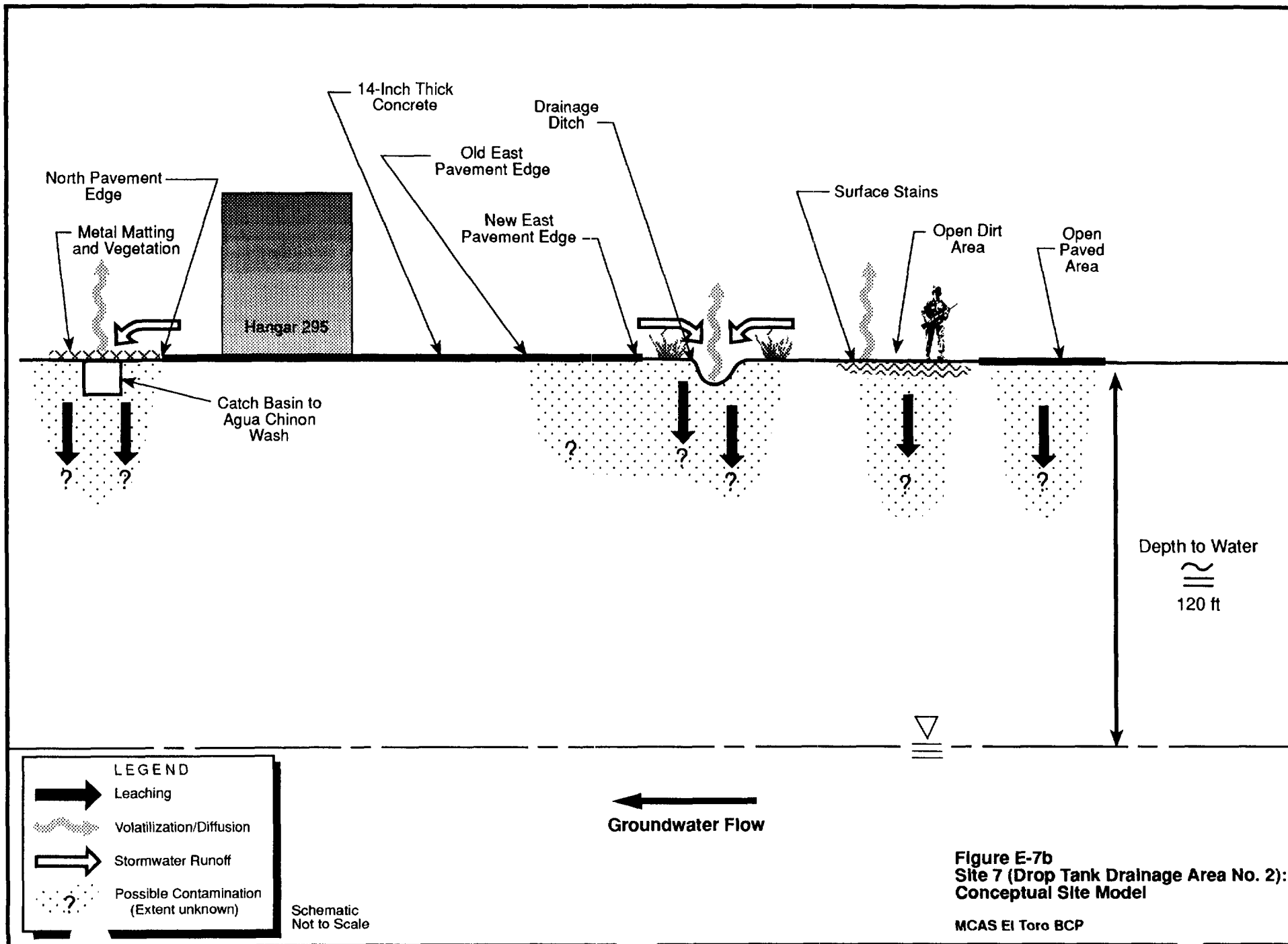


Figure E-7b
Site 7 (Drop Tank Drainage Area No. 2):
Conceptual Site Model

MCAS El Toro BCP

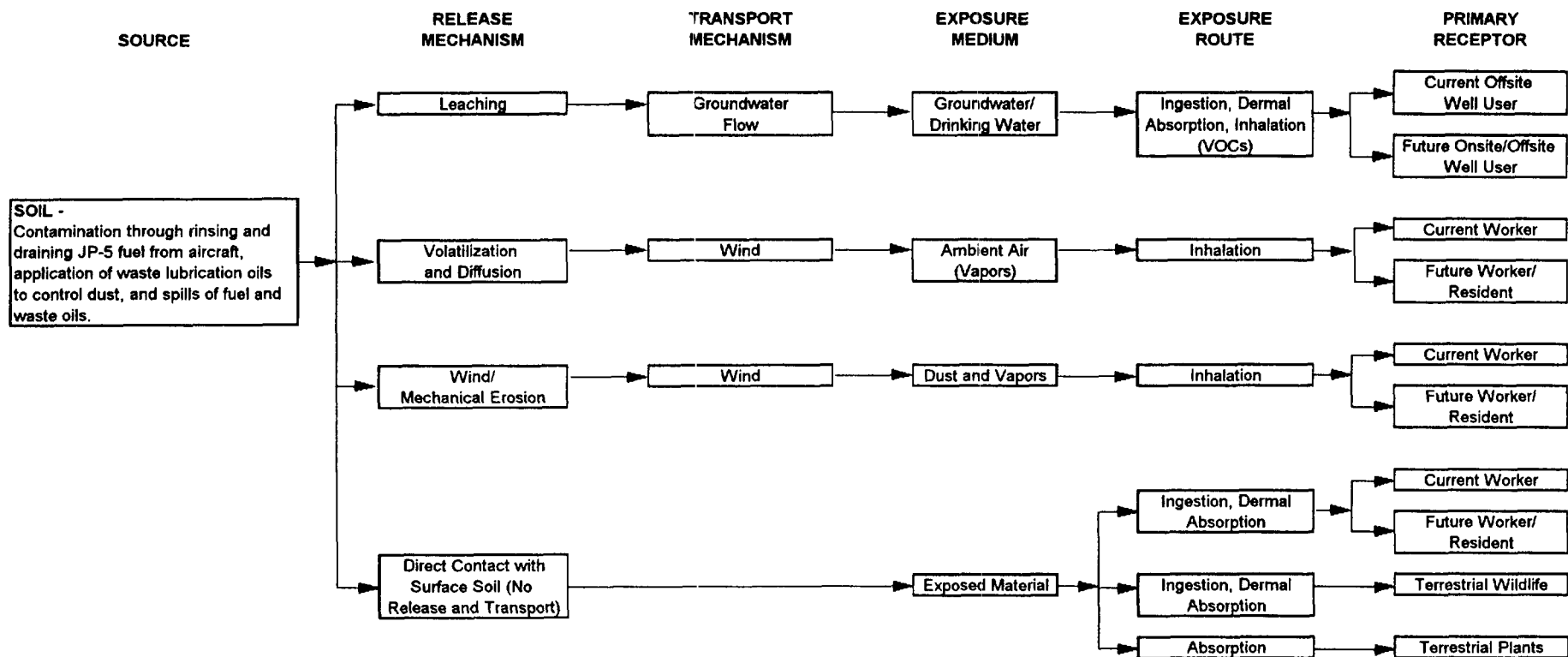
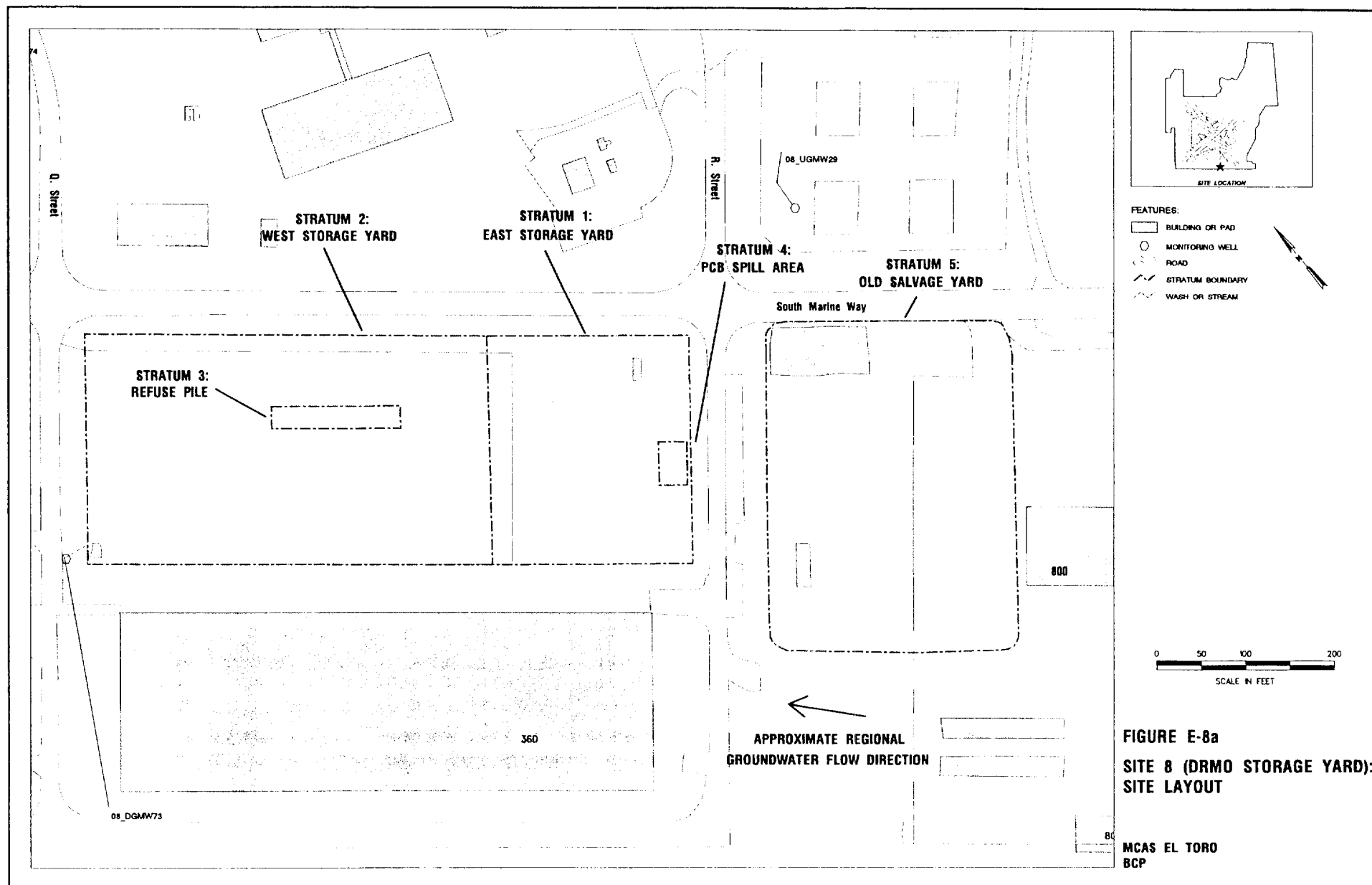
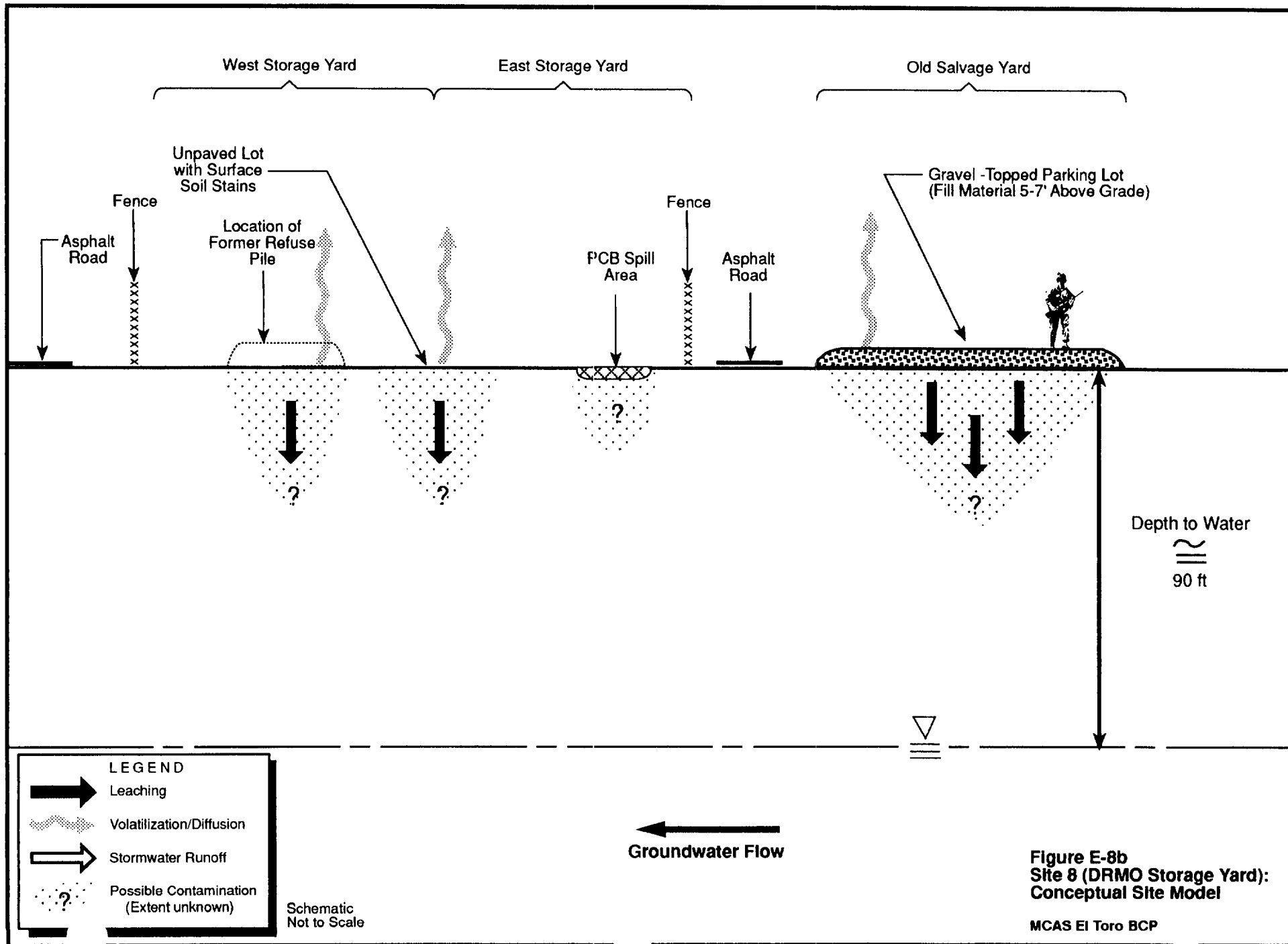


Figure E-7c
 Site 7 (Drop Tank Drainage Area No. 2):
 Potential Exposure Routes and Pathways for Human and Ecologic
 MCAS El Toro BCP





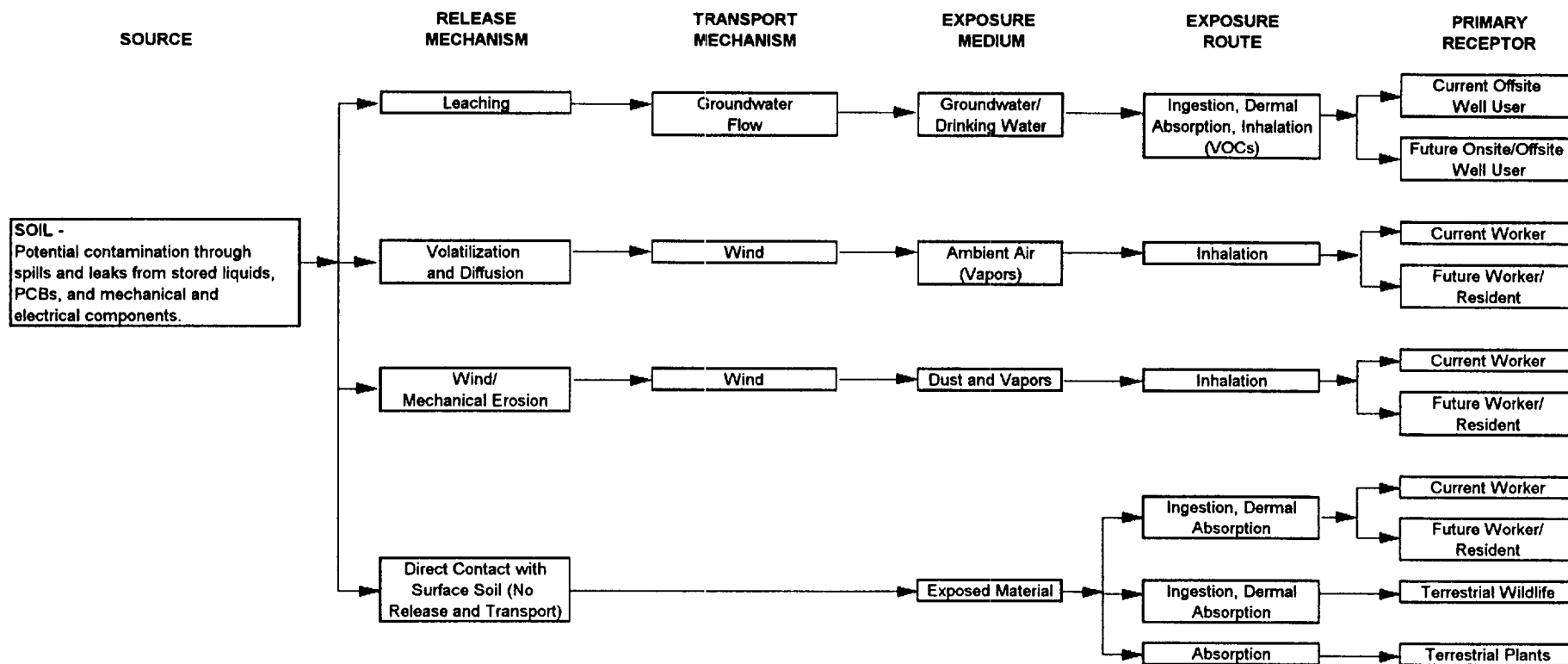
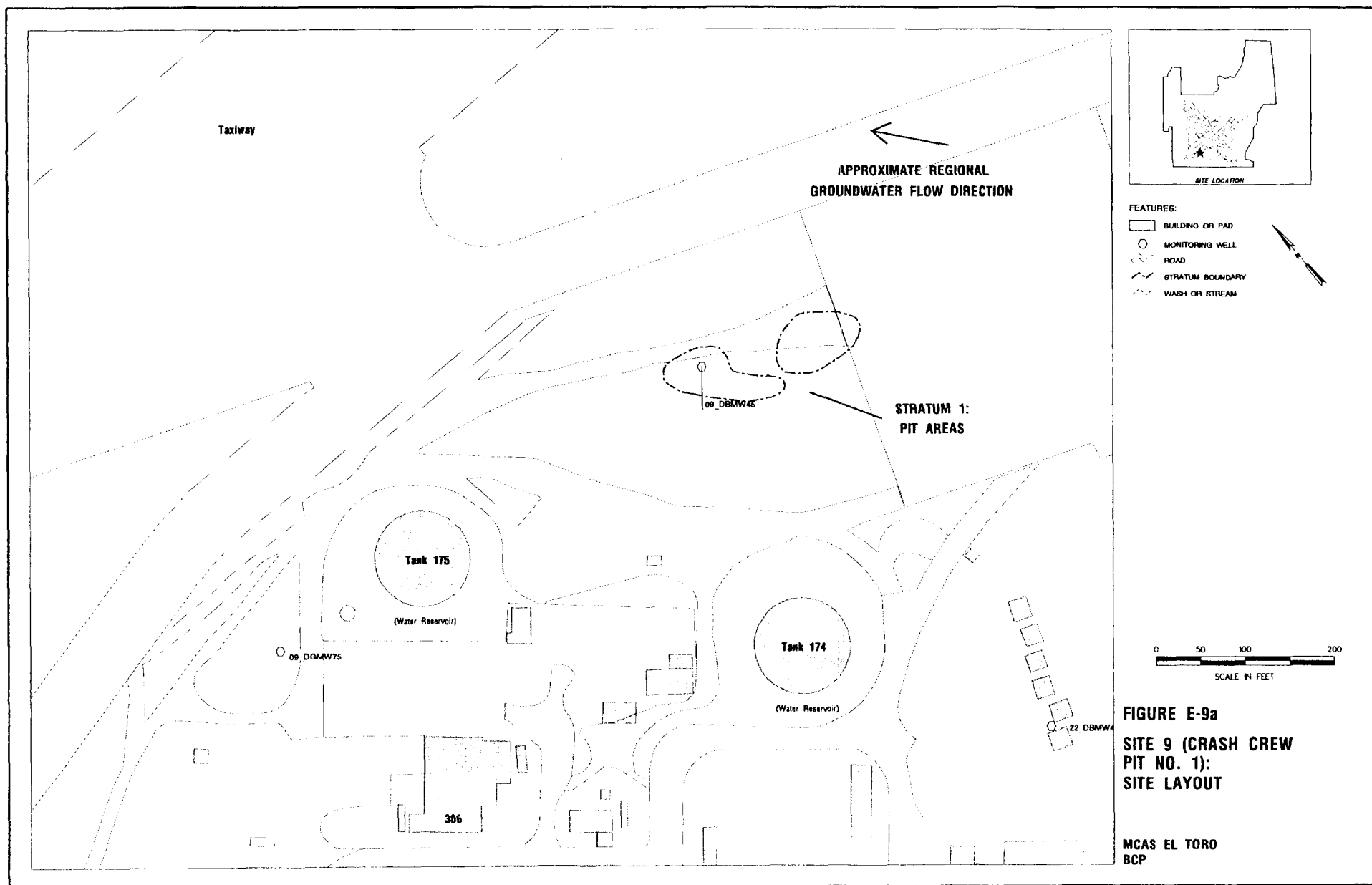
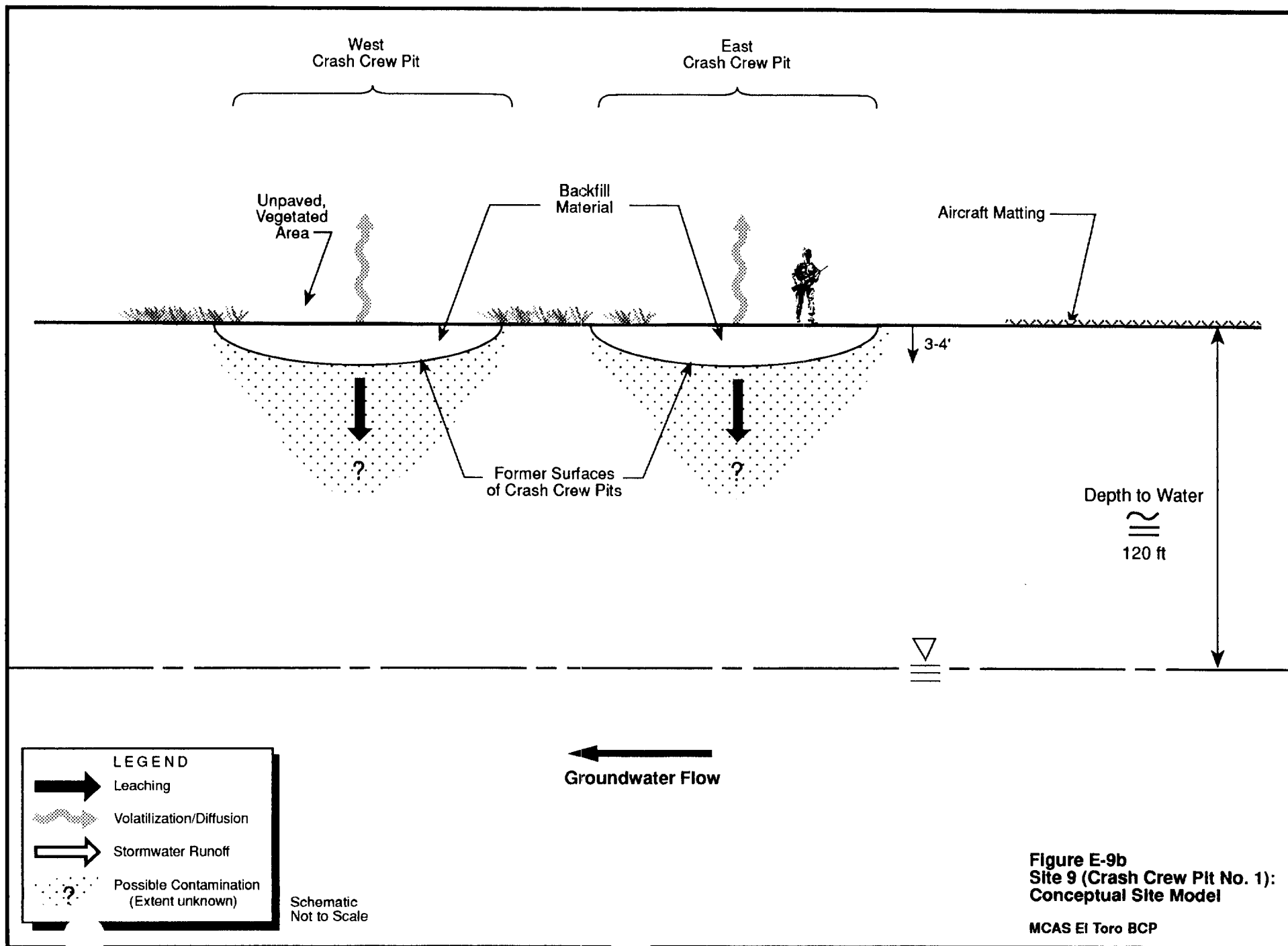


Figure E-8c
Site 8 (DRMO Storage Yard):
Potential Exposure Routes and Pathways for Human and Ecologic
MCAS EI Toro BCP





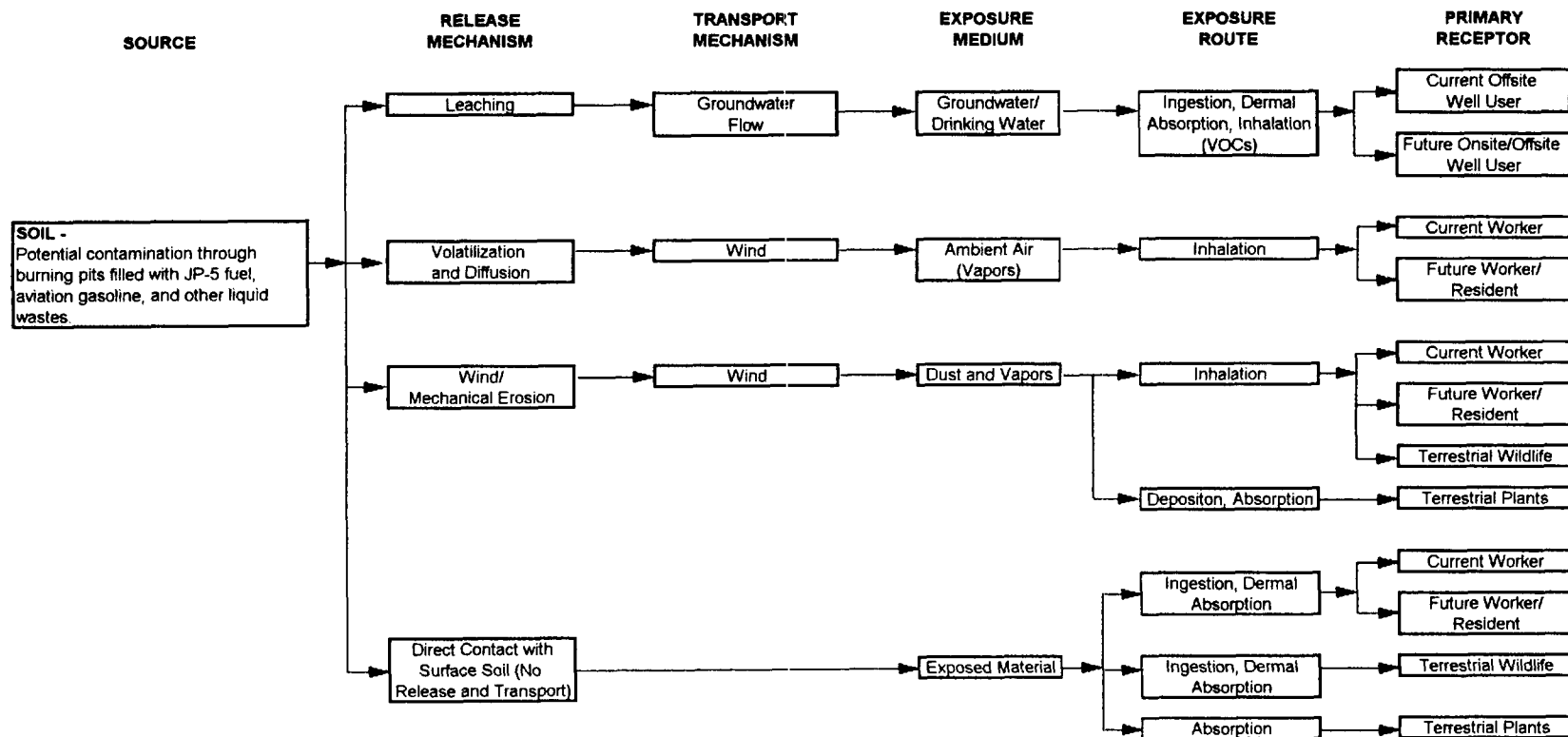
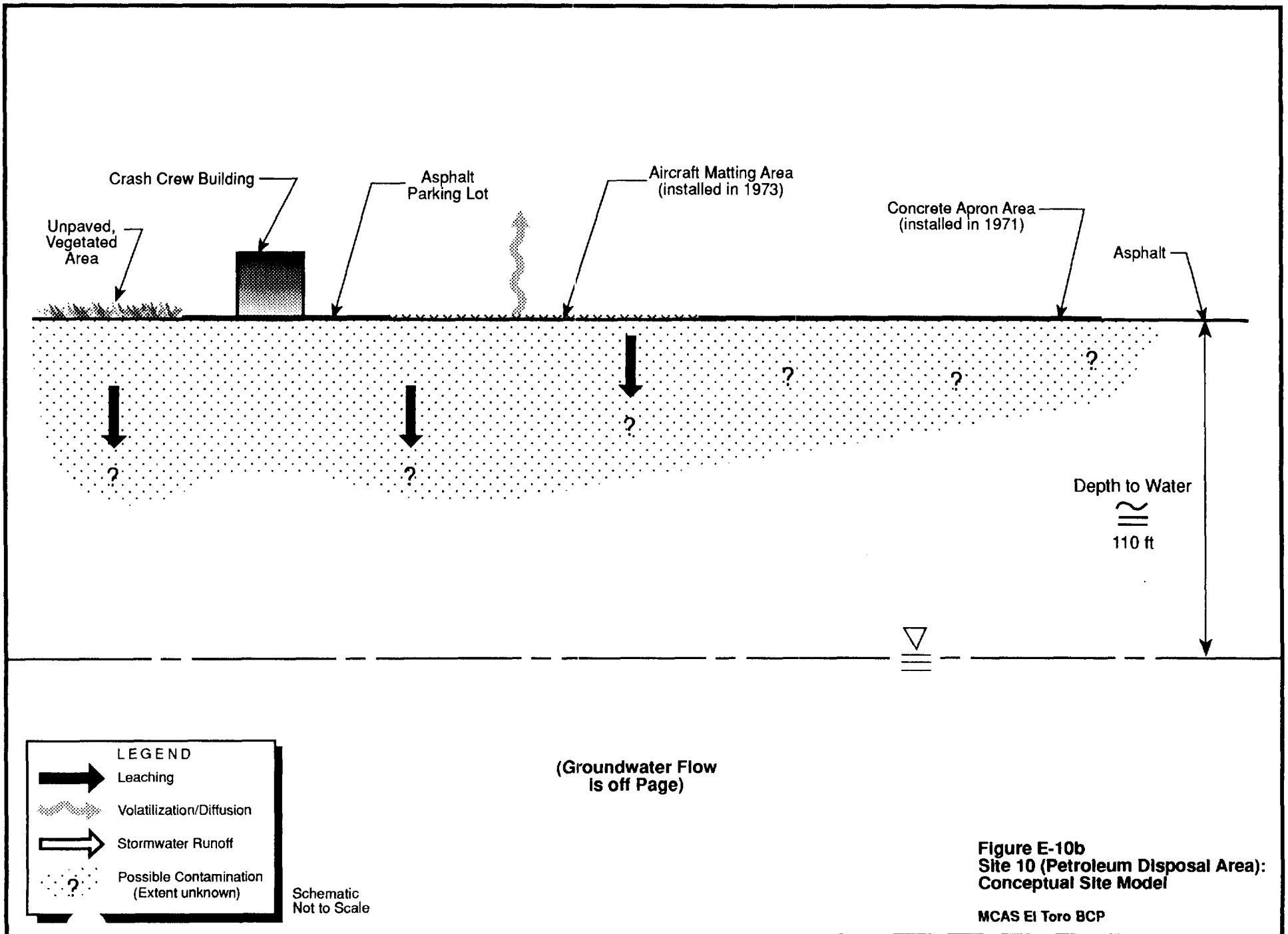


Figure E-9c
Site 9 (Crash Crew Pit No. 1):
Potential Exposure Routes and Pathways for Human and Ecological Receptors
MCAS EI Toro BCP





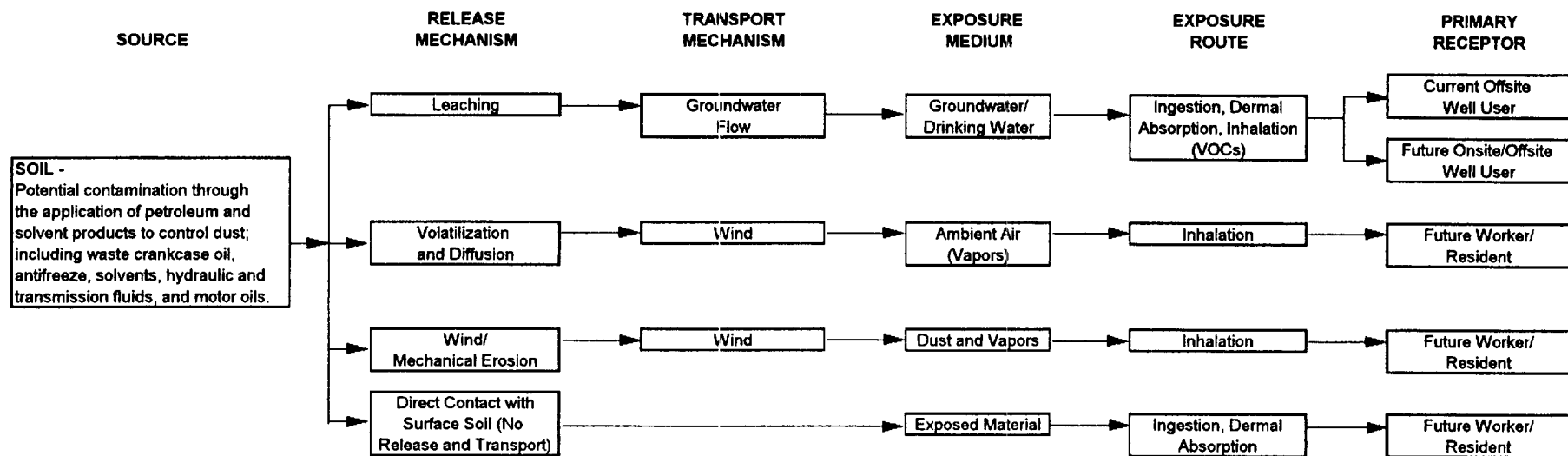


Figure E-10c
 Site 10 (Petroleum Disposal Area):
 Potential Exposure Routes and Pathways for Human Receptors
 MCAS El Toro BCP

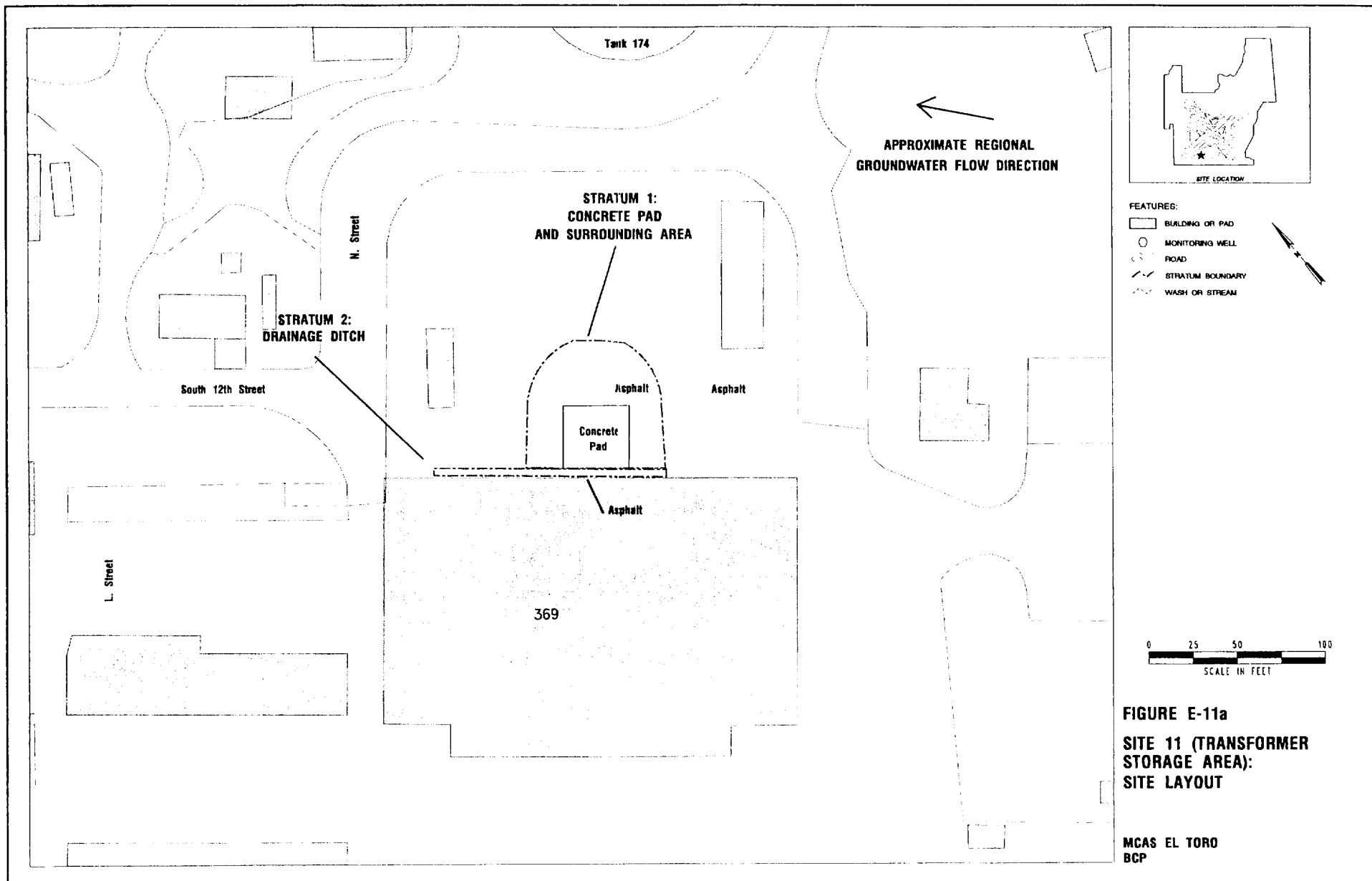


FIGURE E-11a
SITE 11 (TRANSFORMER
STORAGE AREA):
SITE LAYOUT

MCAS EL TORO
BCP

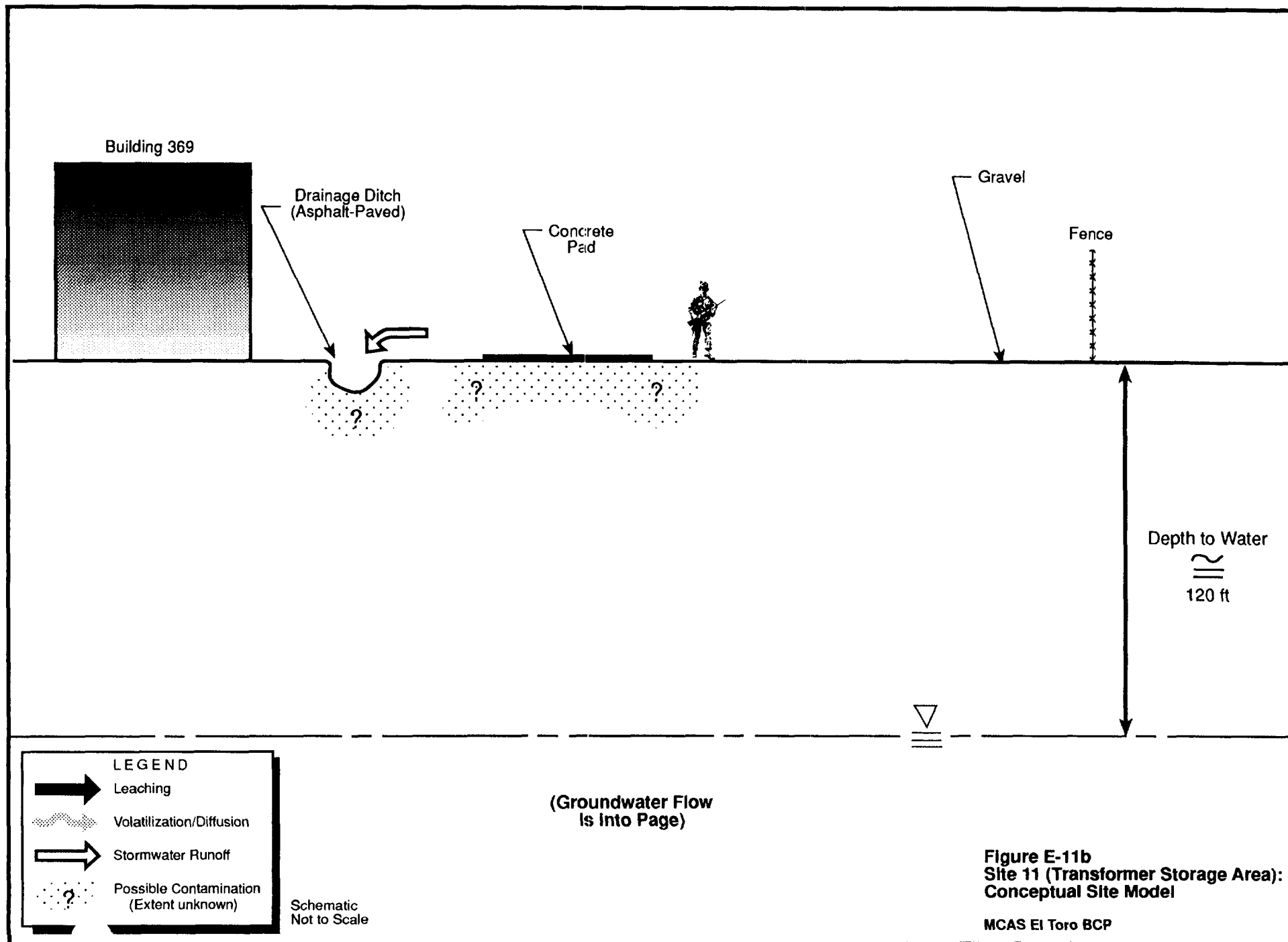


Figure E-11b
Site 11 (Transformer Storage Area):
Conceptual Site Model

MCAS El Toro BCP

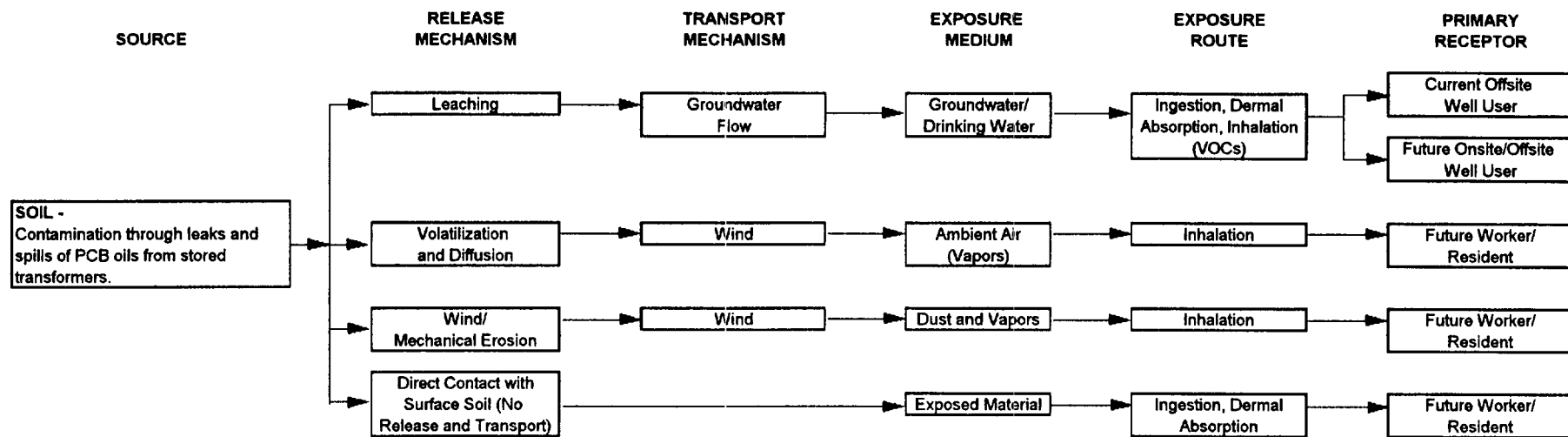
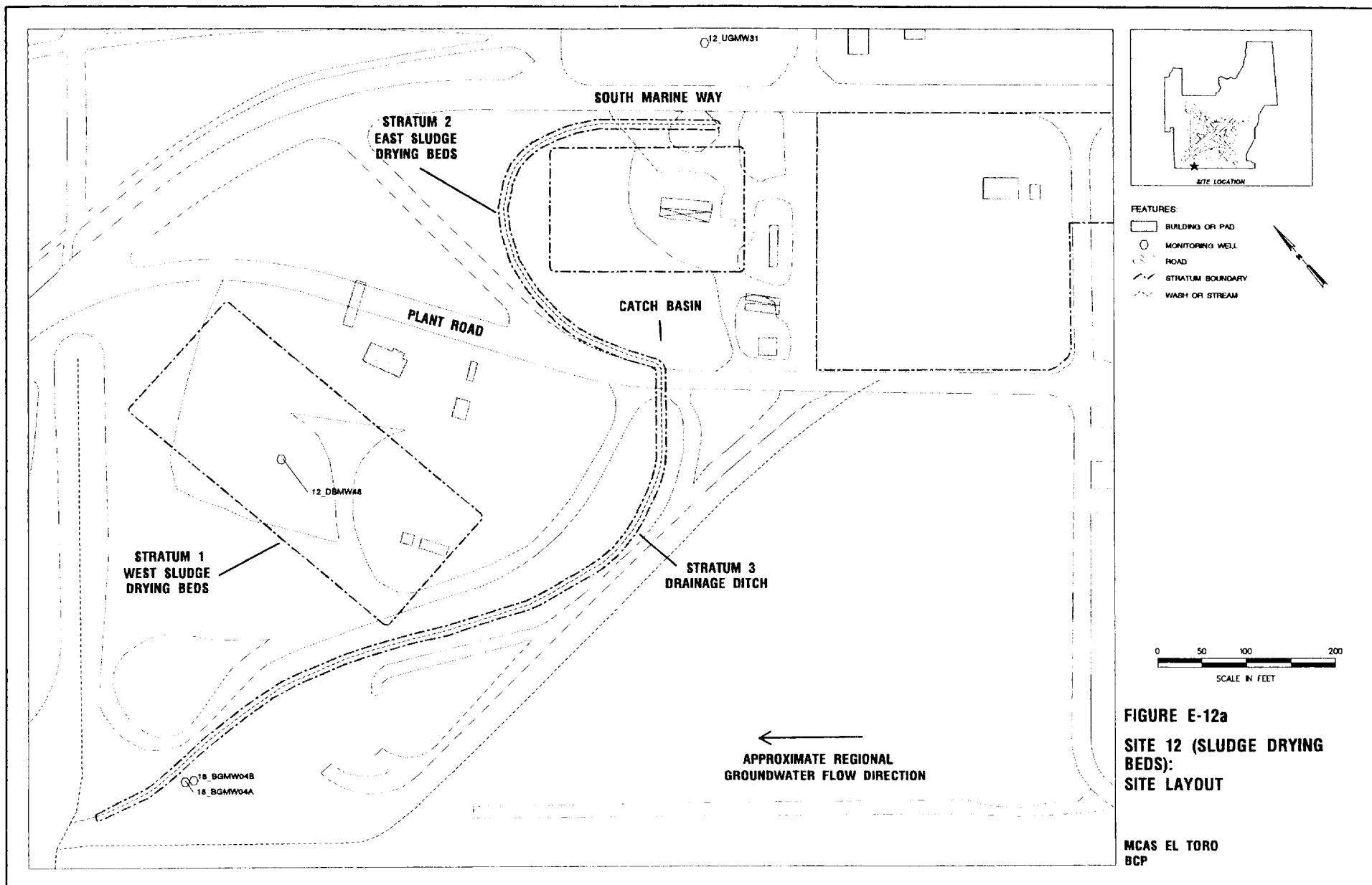
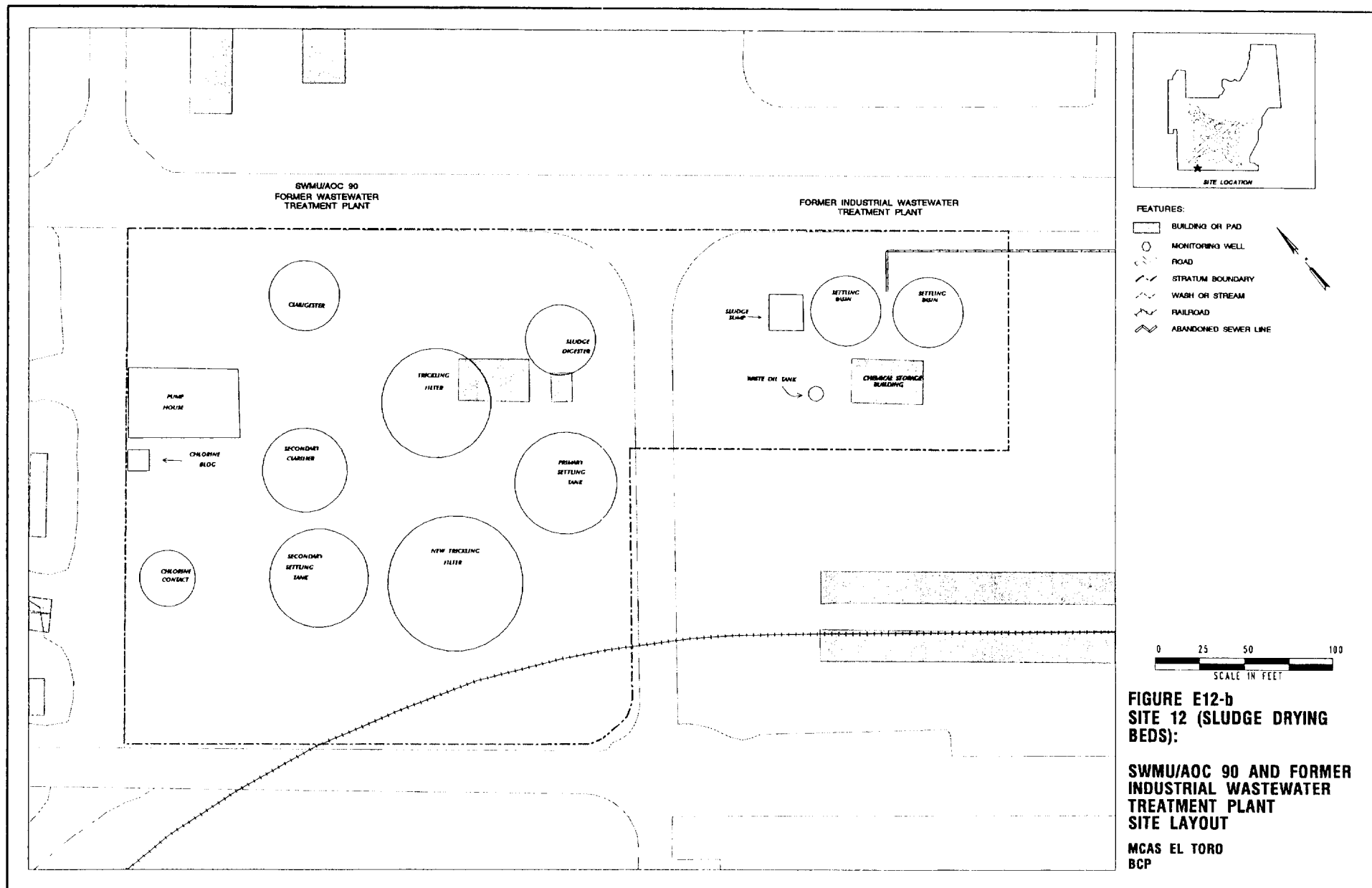
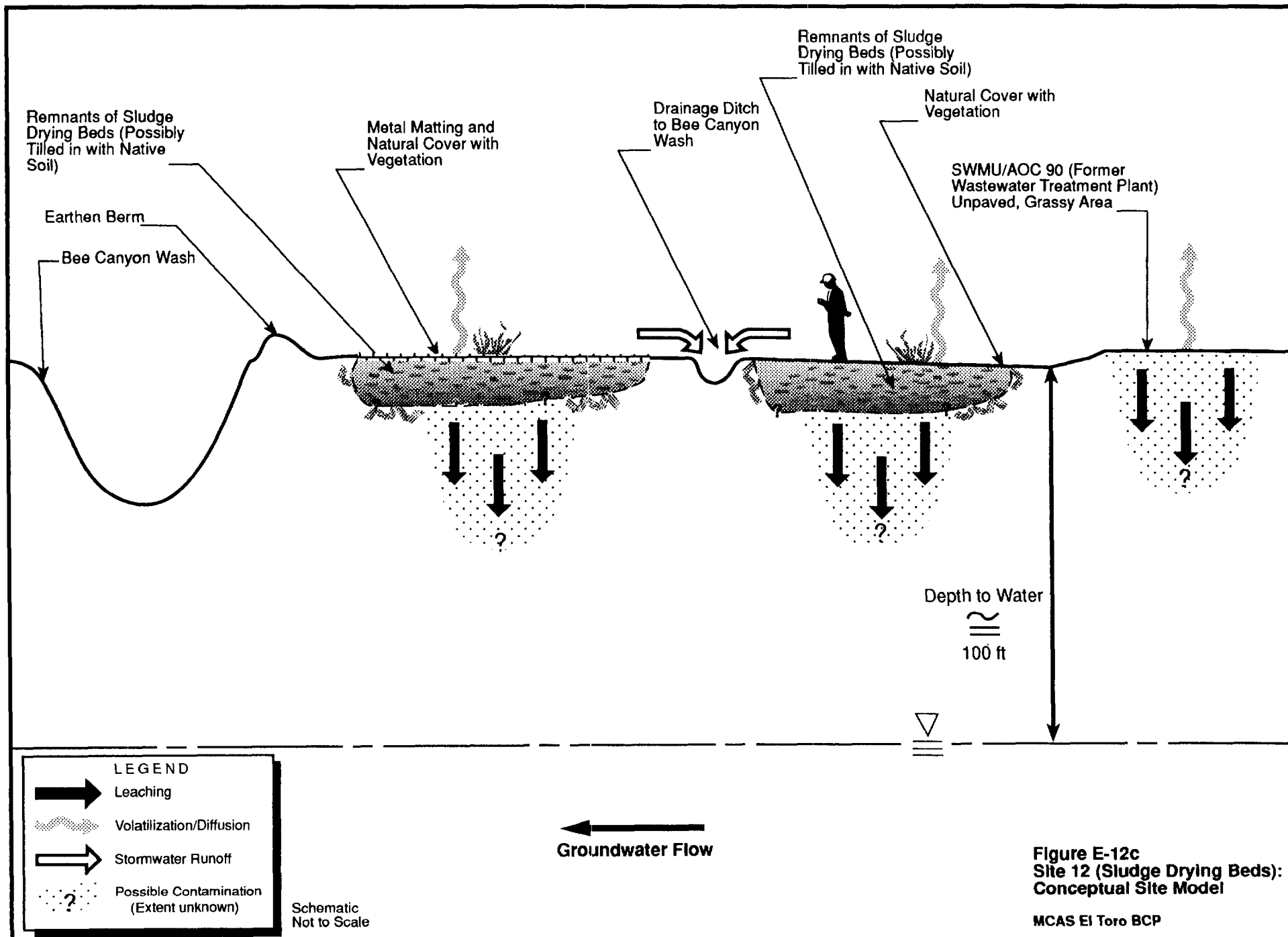


Figure E-11c
 Site 11 (Transformer Storage Area):
 Potential Exposure Routes and Pathways for Human Receptors
 MCAS El Toro BCP







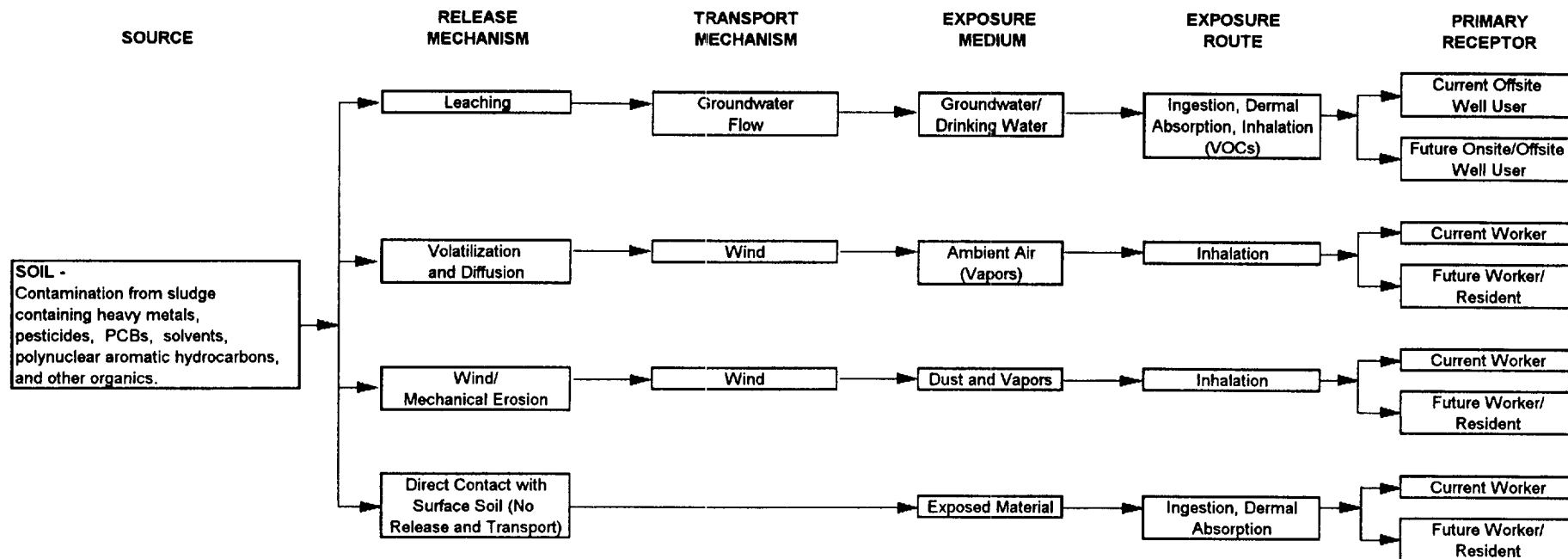
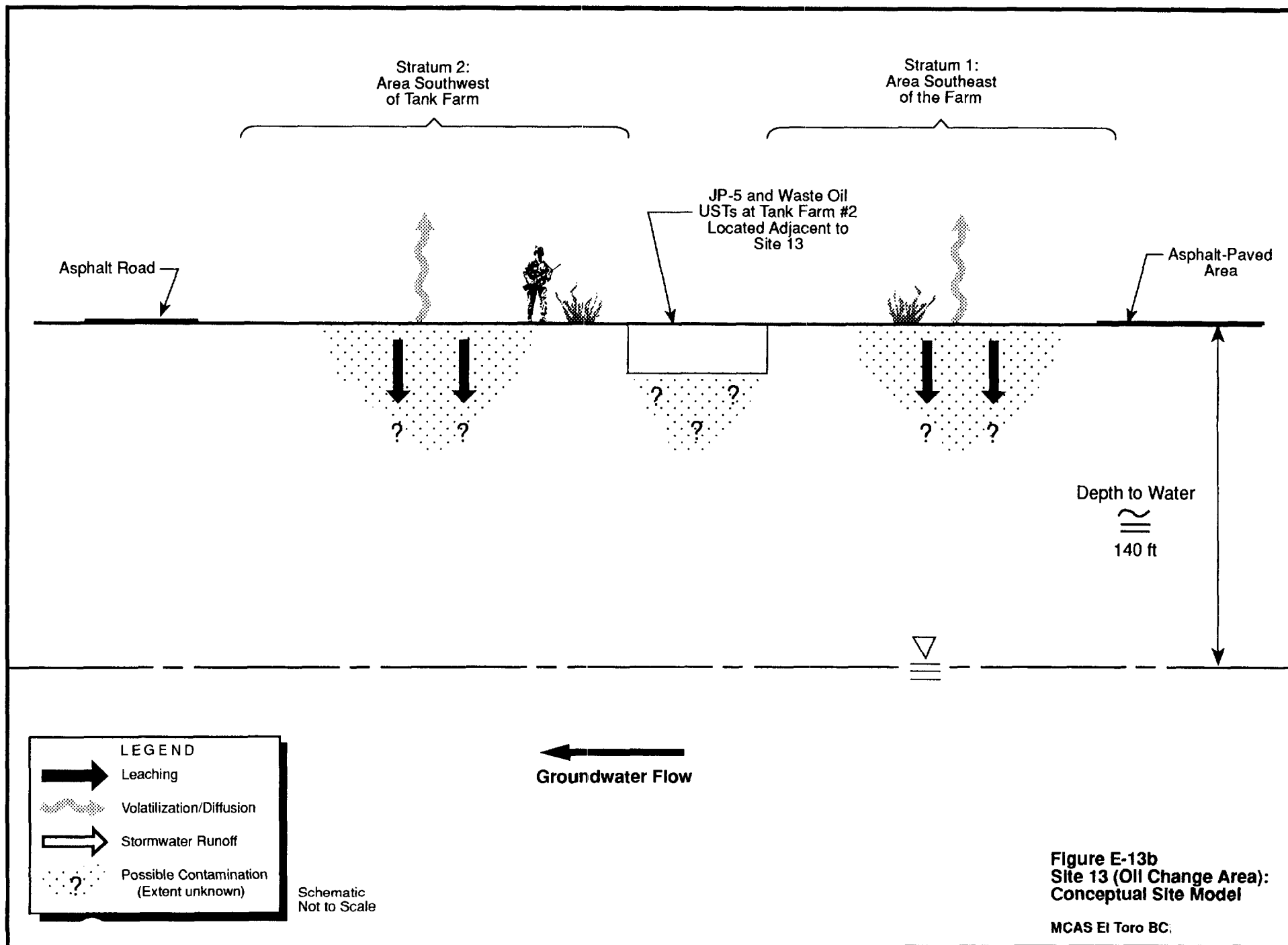


Figure E-12d
Site 12 (Sludge Drying Beds):
Potential Exposure Routes and Pathways for Human Receptors
MCAS El Toro BCP





**Figure E-13b
Site 13 (Oil Change Area):
Conceptual Site Model**

MCAS El Toro BC

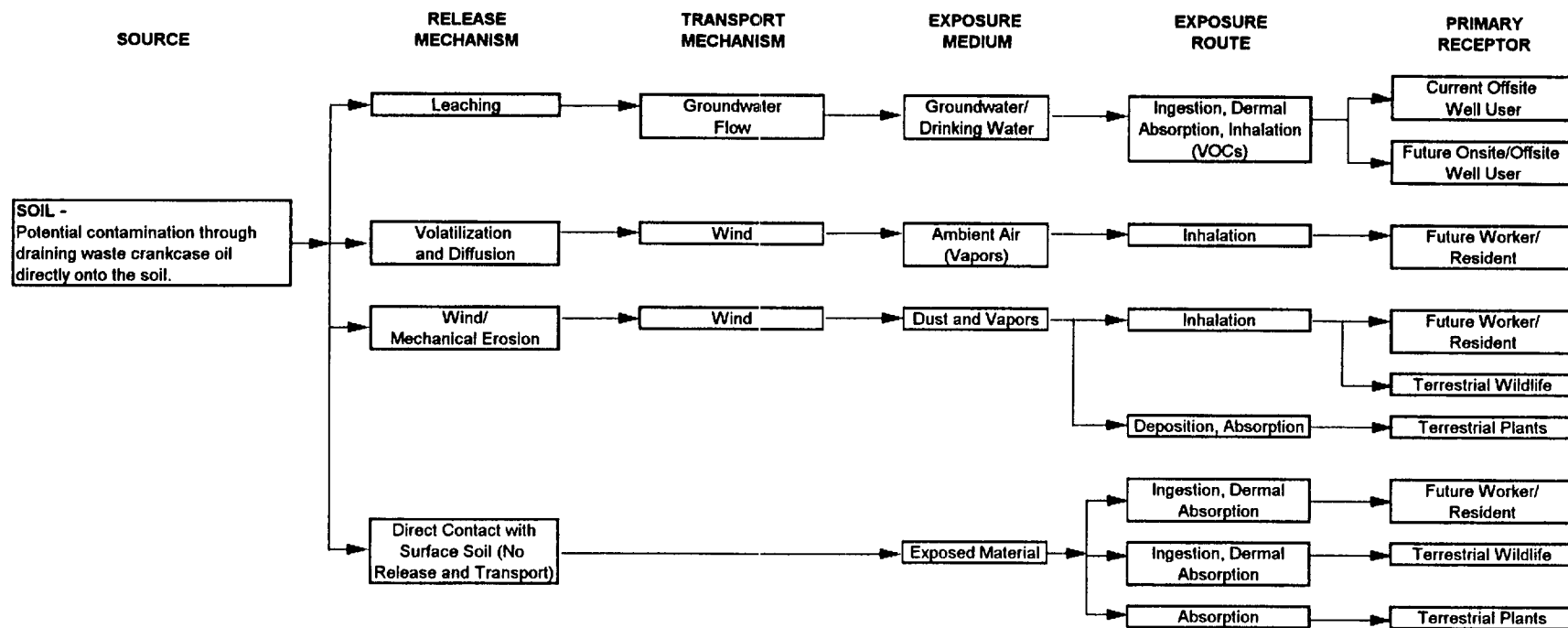
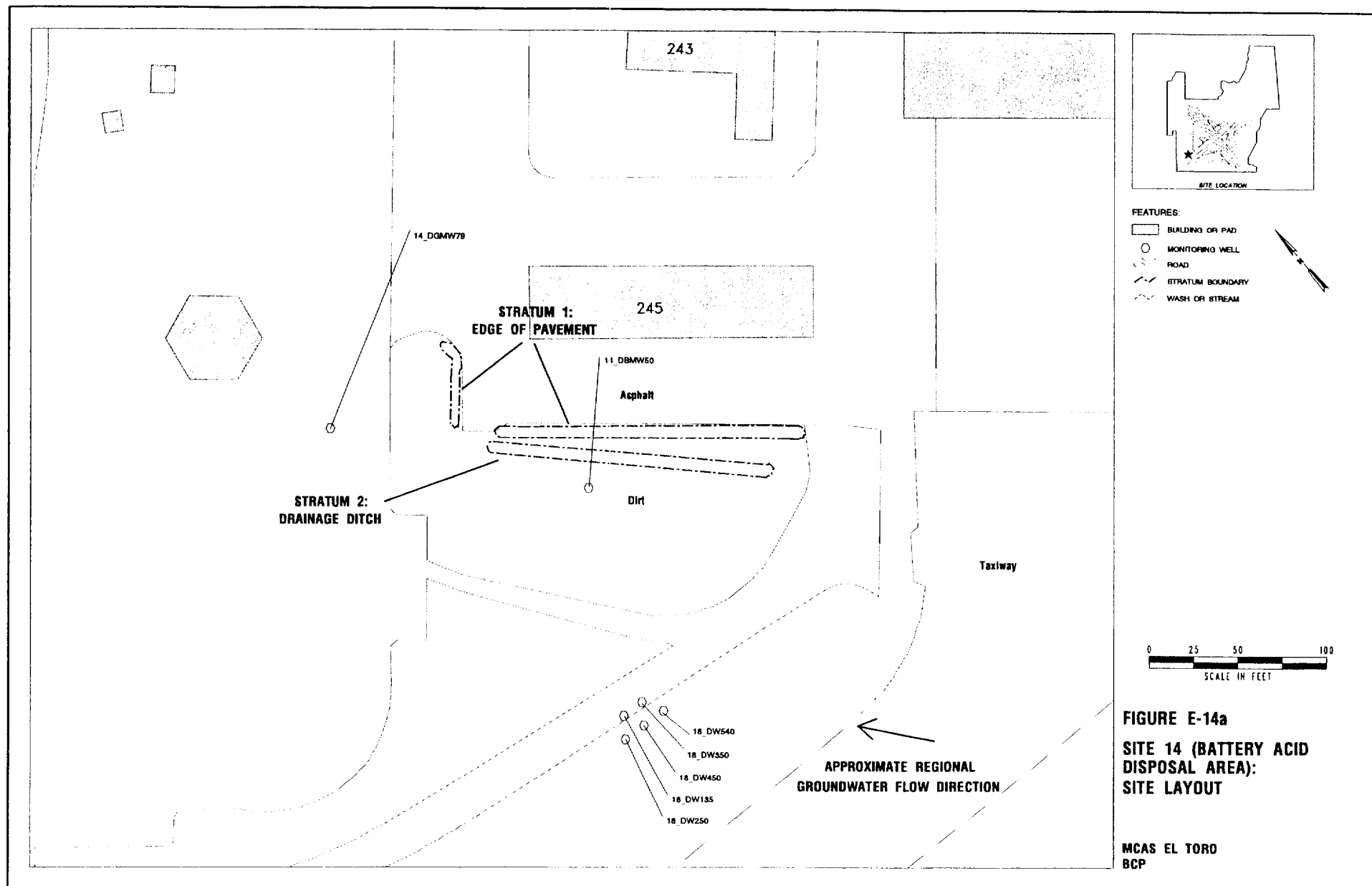
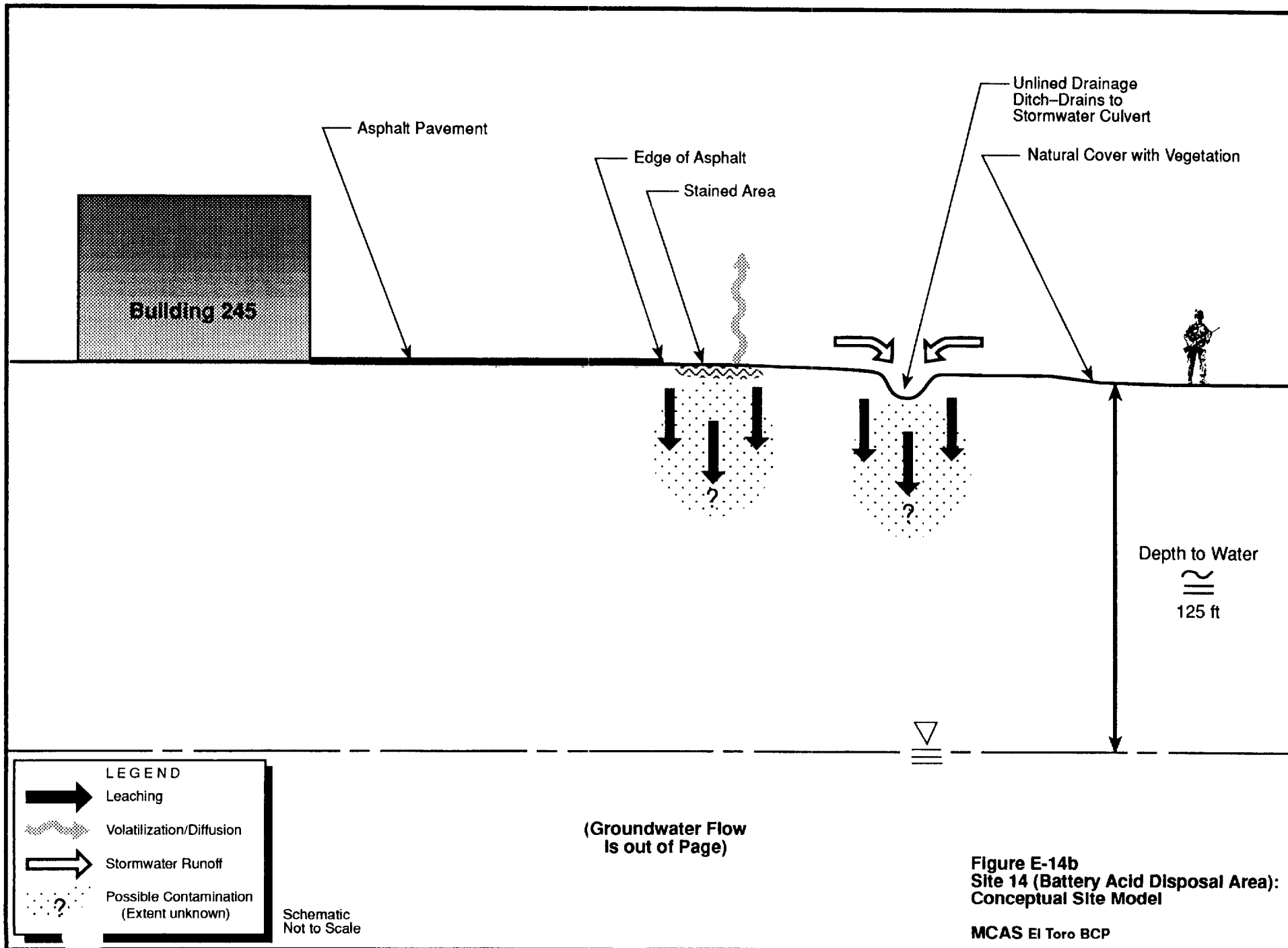


Figure E-13c
Site 13 (Oil Change Area):
Potential Exposure Routes and Pathways for Human and Ecological Receptors
MCAS El Toro BCP





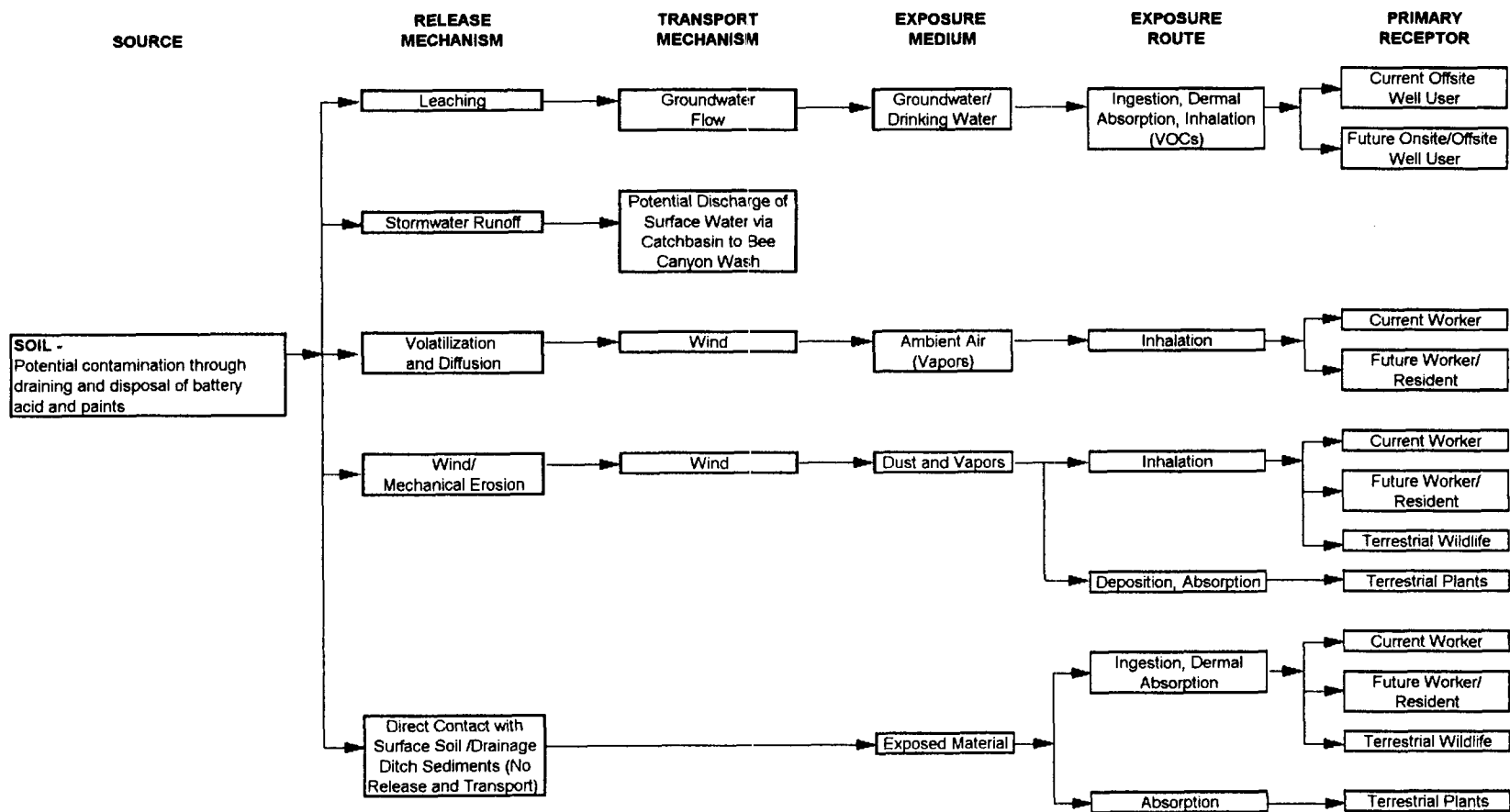
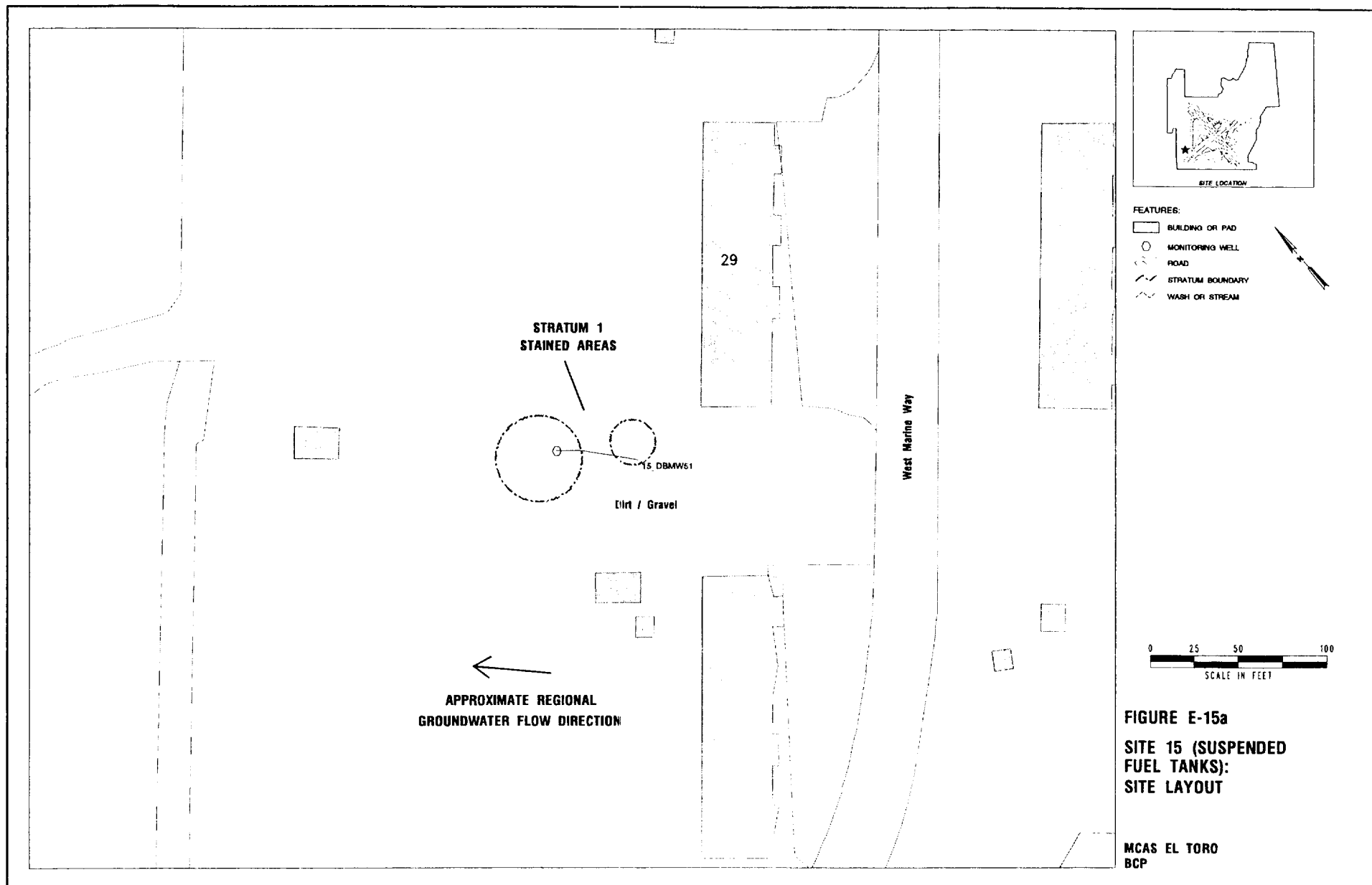


Figure E-14c
Site 14 (Battery Acid Disposal Area):
Potential Exposure Routes and Pathways for Human and Ecological Receptors
MCAS El Toro BCP



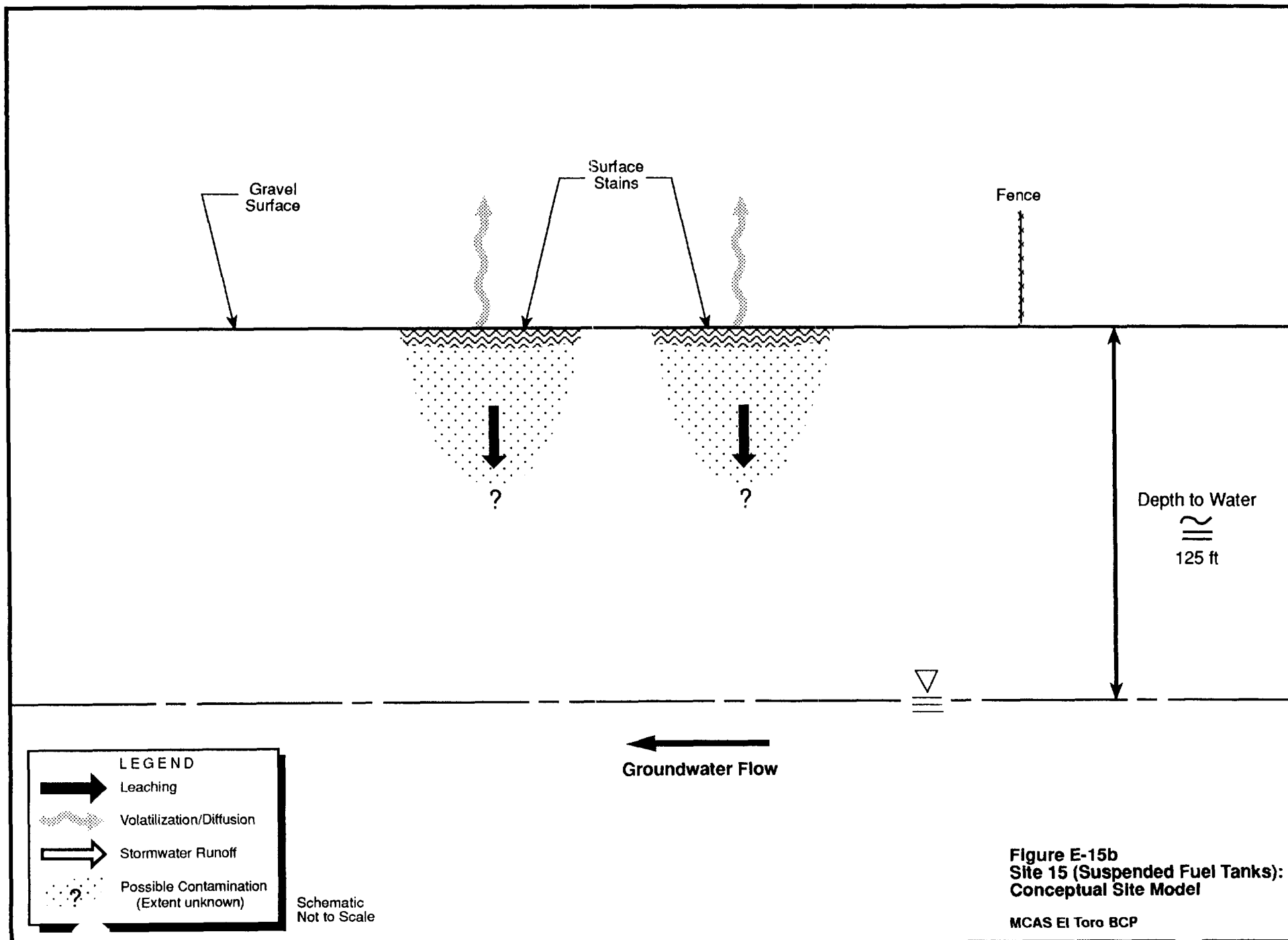


Figure E-15b
Site 15 (Suspended Fuel Tanks):
Conceptual Site Model

MCAS El Toro BCP

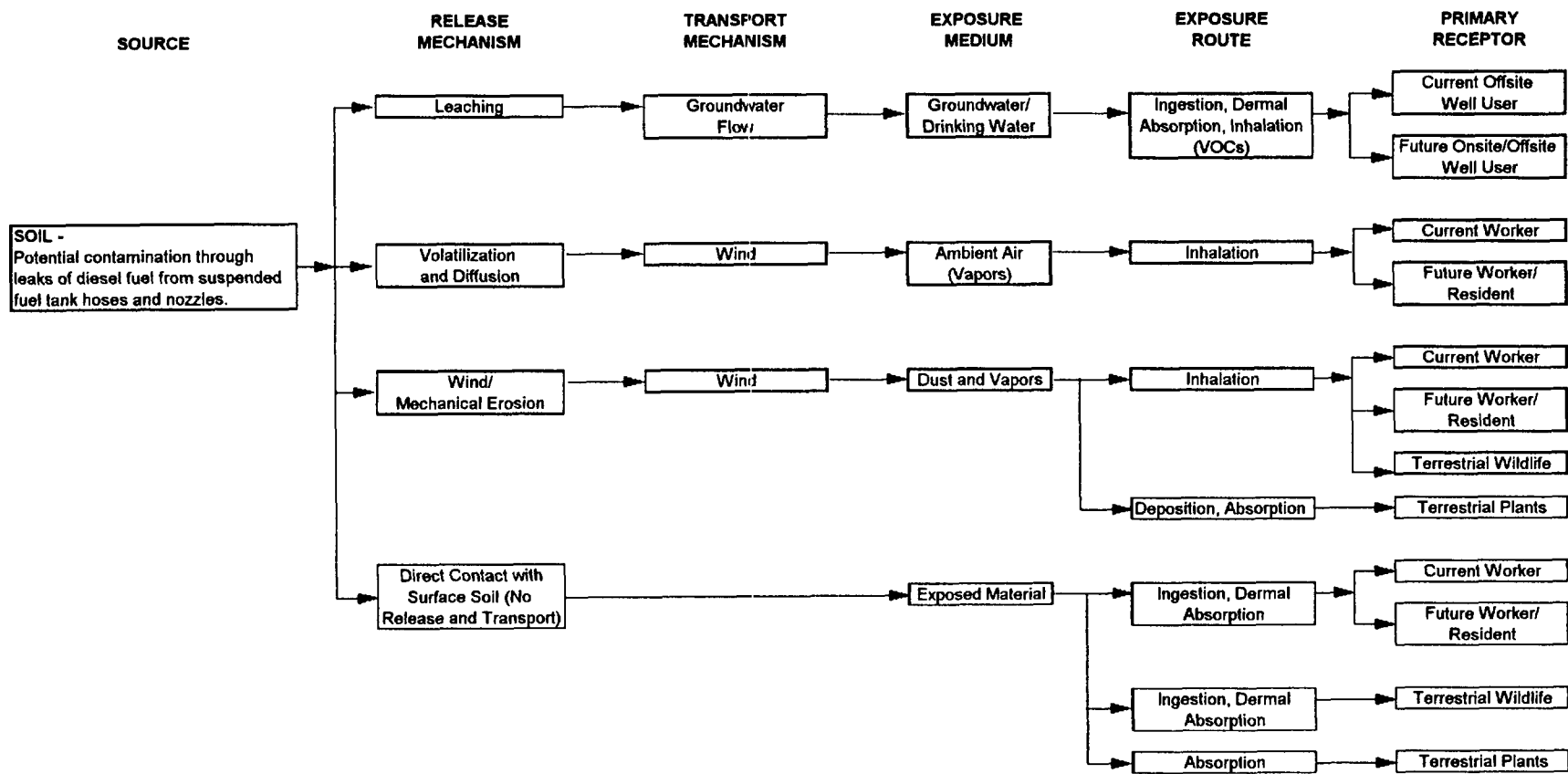


Figure E-15c
Site 15 (Suspended Fuel Tanks):
Potential Exposure Routes and Pathways for Human and Ecological Receptors
MCAS El Toro BCP

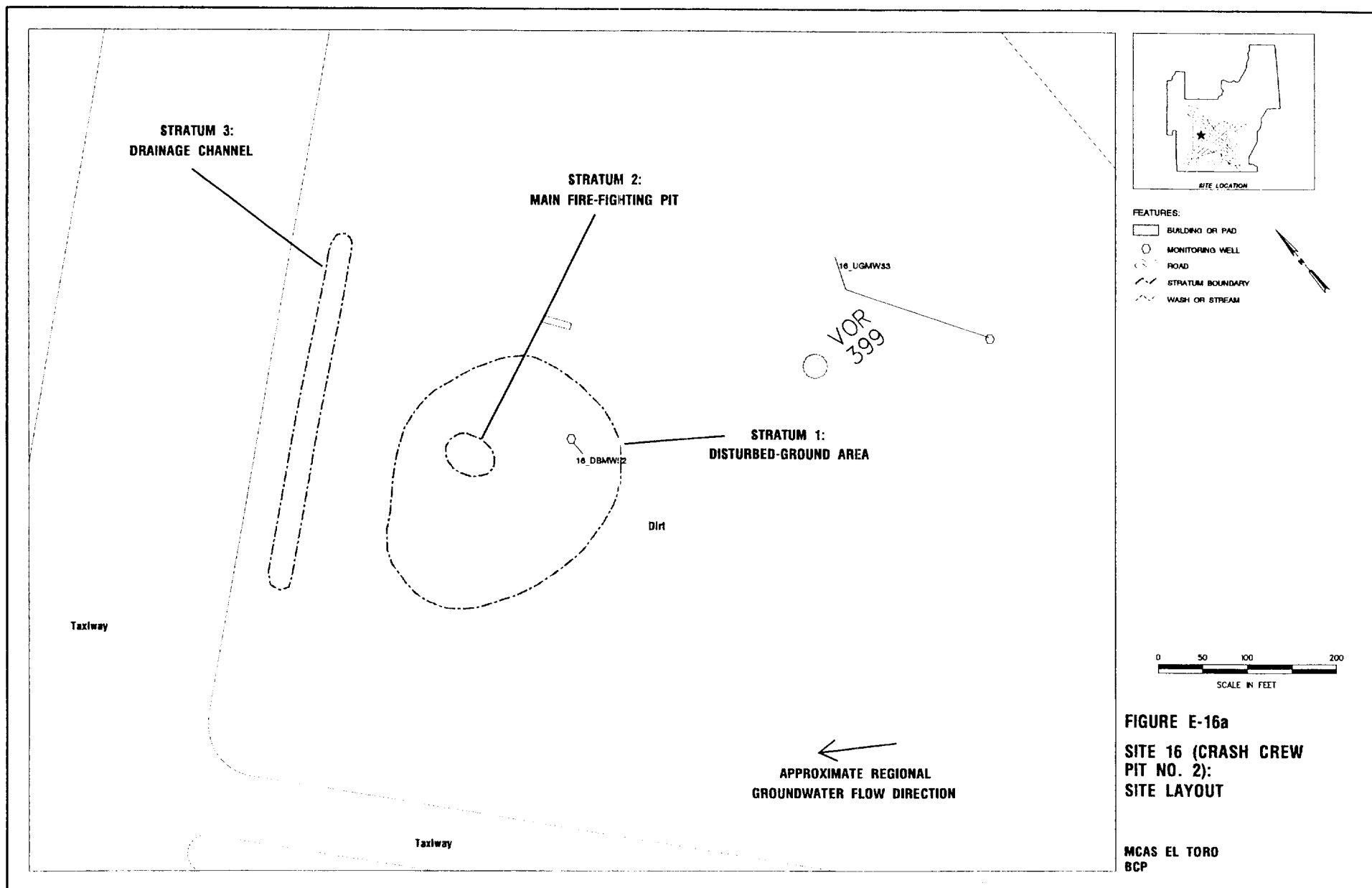


FIGURE E-16a
SITE 16 (CRASH CREW
PIT NO. 2):
SITE LAYOUT

MCAS EL TORO
BCP

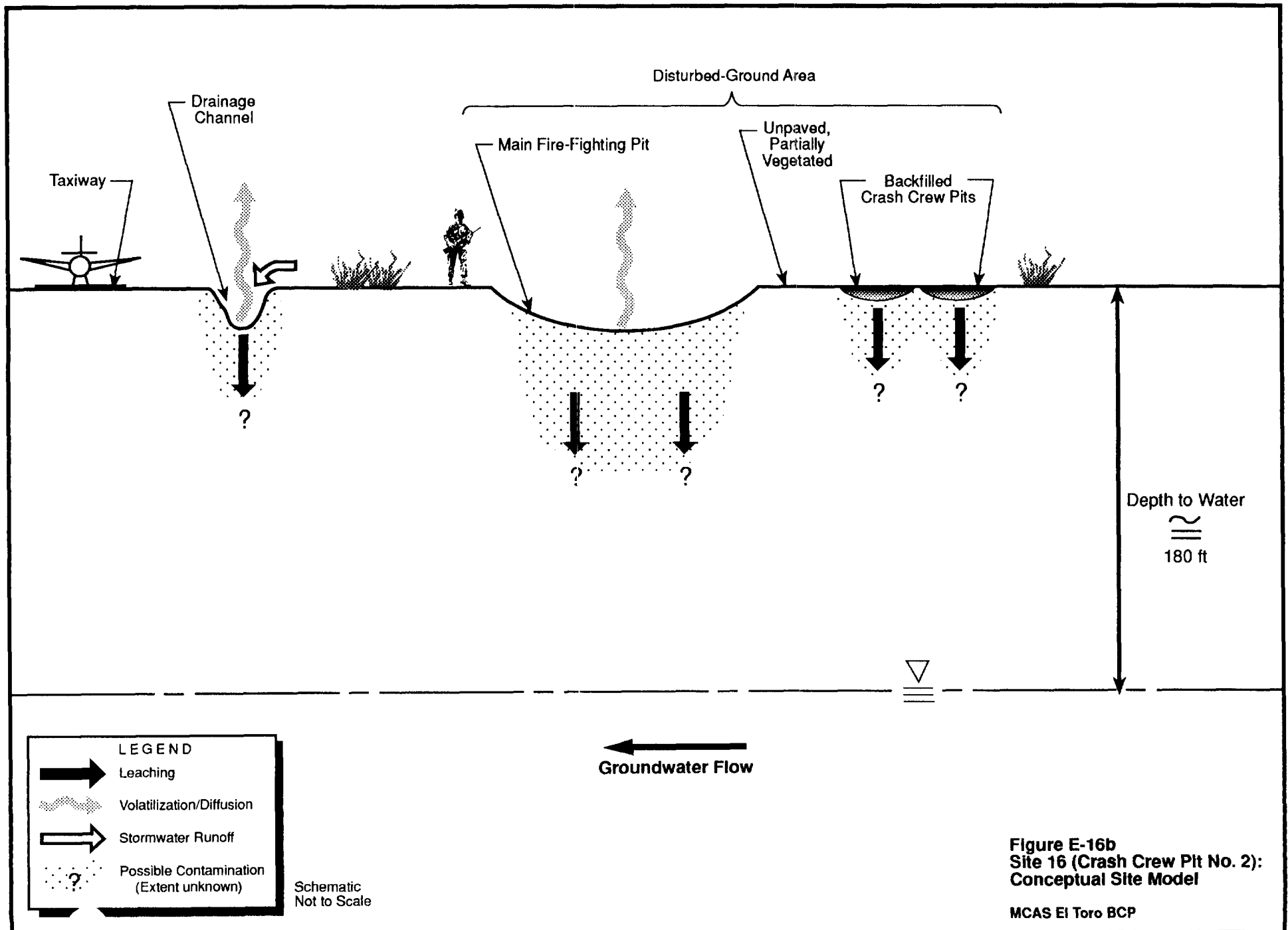


Figure E-16b
Site 16 (Crash Crew Pit No. 2):
Conceptual Site Model

MCAS El Toro BCP

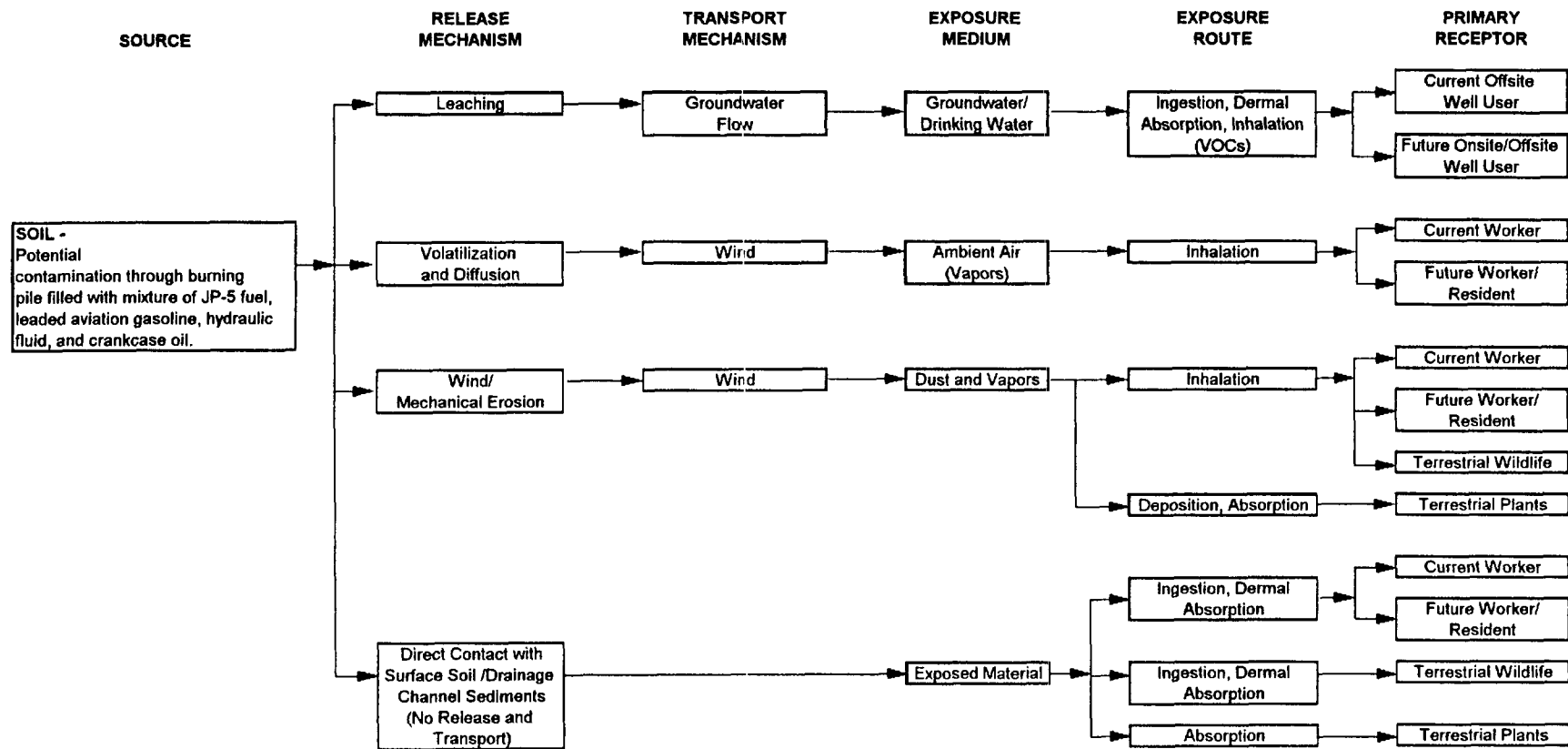
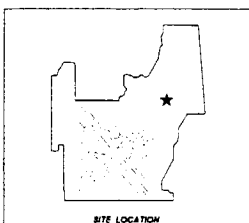
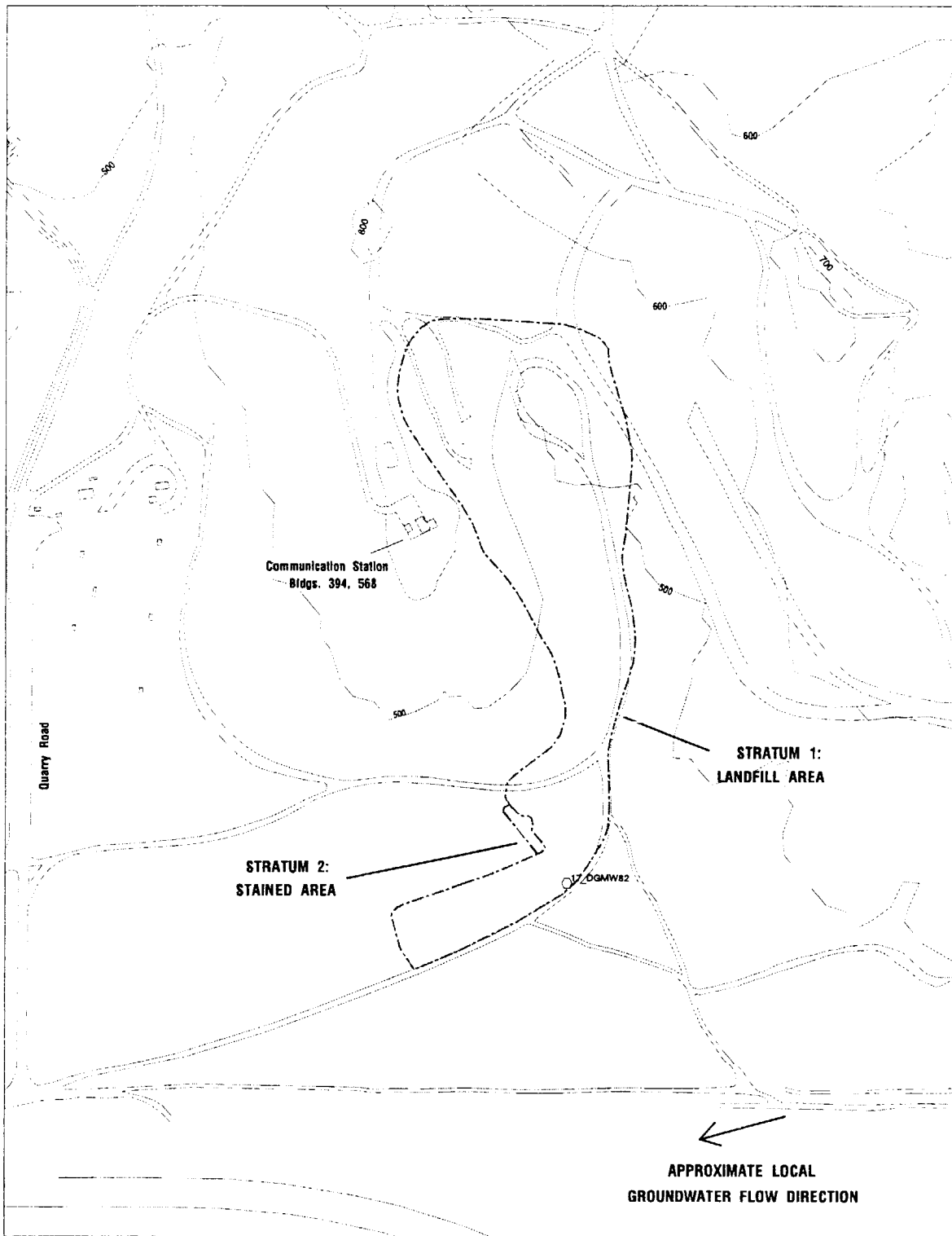


Figure E-16c
 Site 16 (Crash Crew Pit No. 2):
 Potential Exposure Routes and Pathways for Human and Ecological Receptors
 MCAS El Toro BCP



- FEATURES:**
- BUILDING OR PAD
 - MONITORING WELL
 - ROAD
 - STRATUM BOUNDARY
 - WASH OR STREAM
 - ELEVATION CONTOUR

0 100 200 400
SCALE IN FEET



FIGURE E-17a

**SITE 17 (COMMUNICATION
STATION LANDFILL):
SITE LAYOUT**

**MCAS EL TORO
BCP**

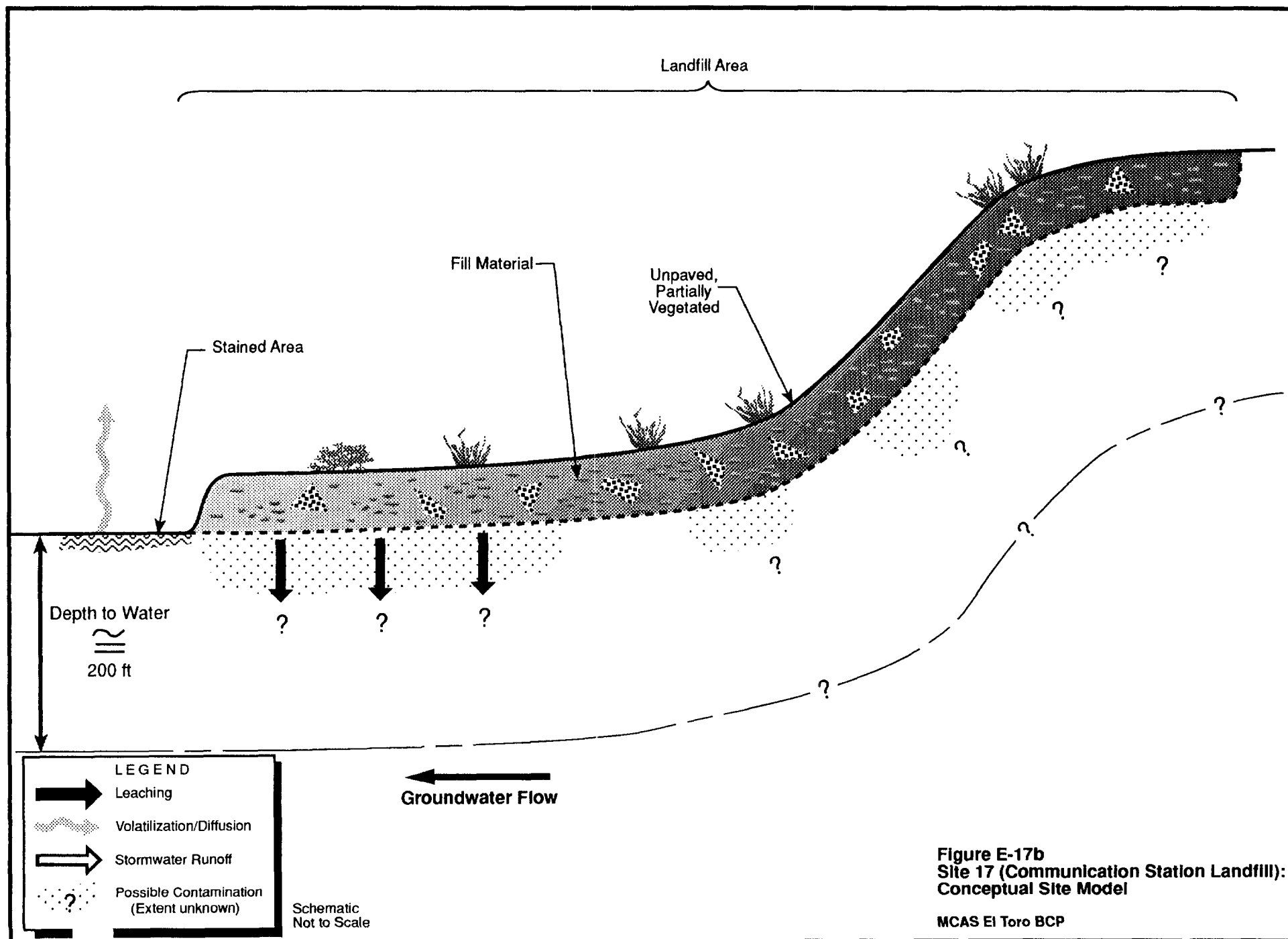


Figure E-17b
Site 17 (Communication Station Landfill):
Conceptual Site Model

MCAS El Toro BCP

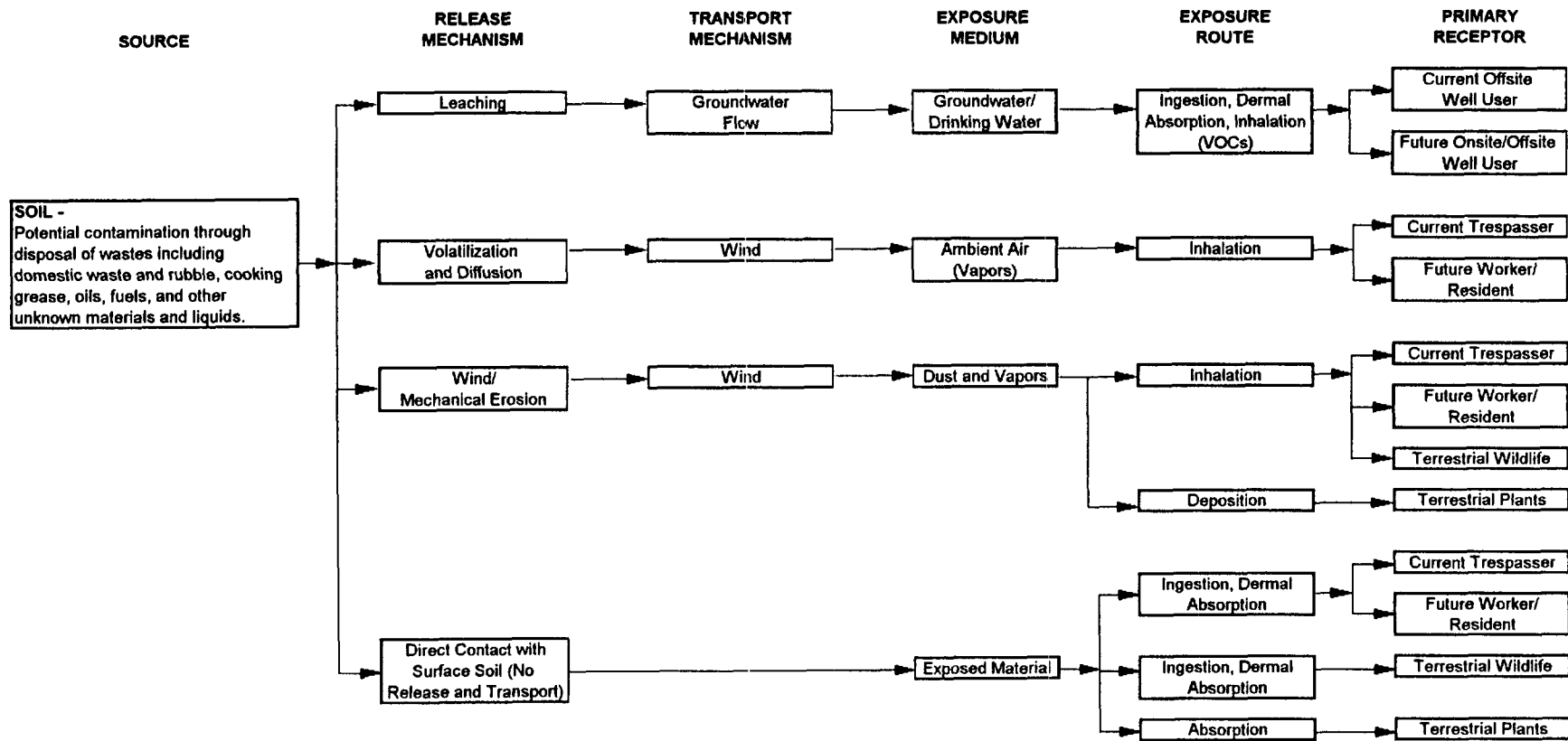
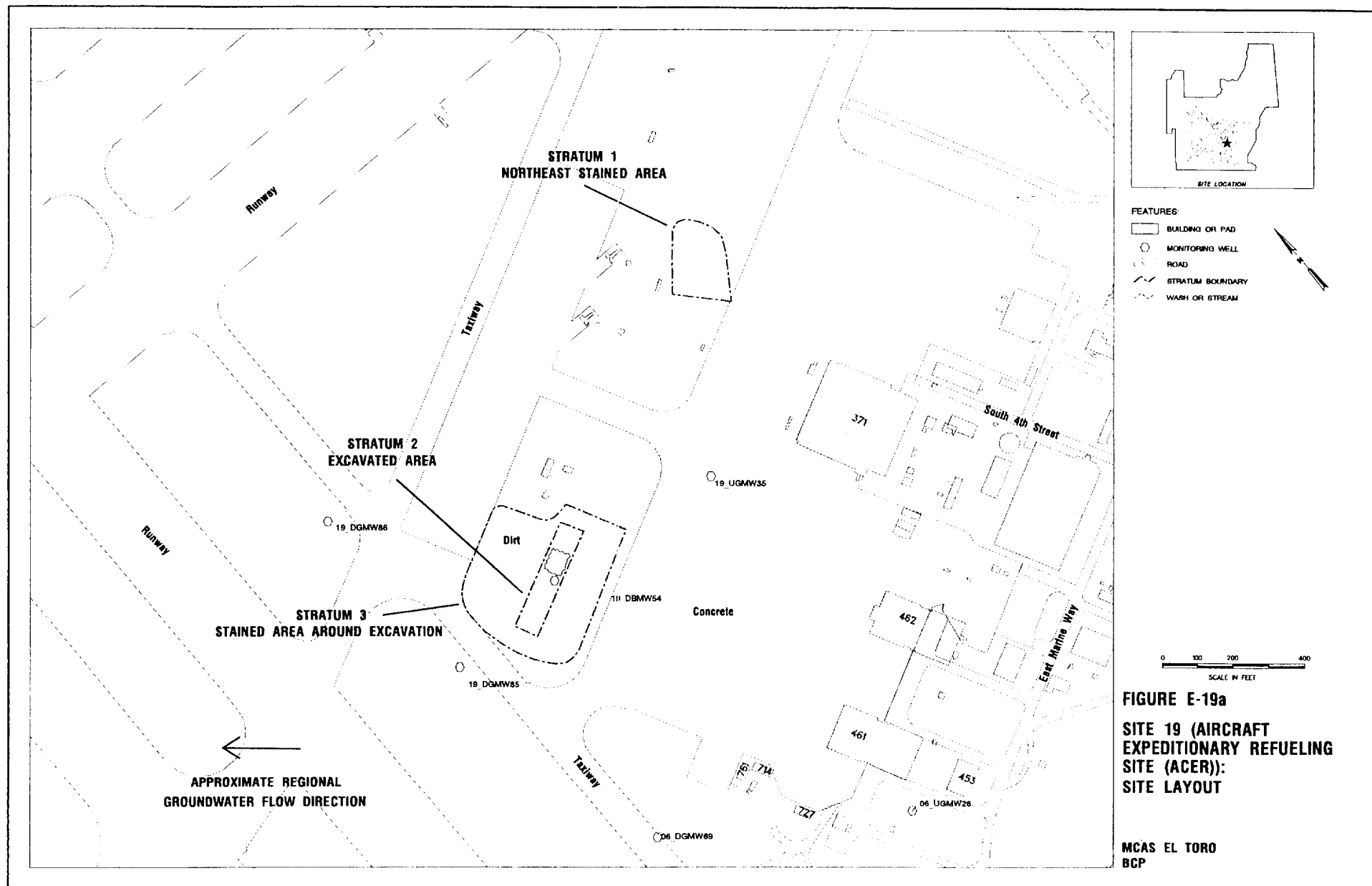
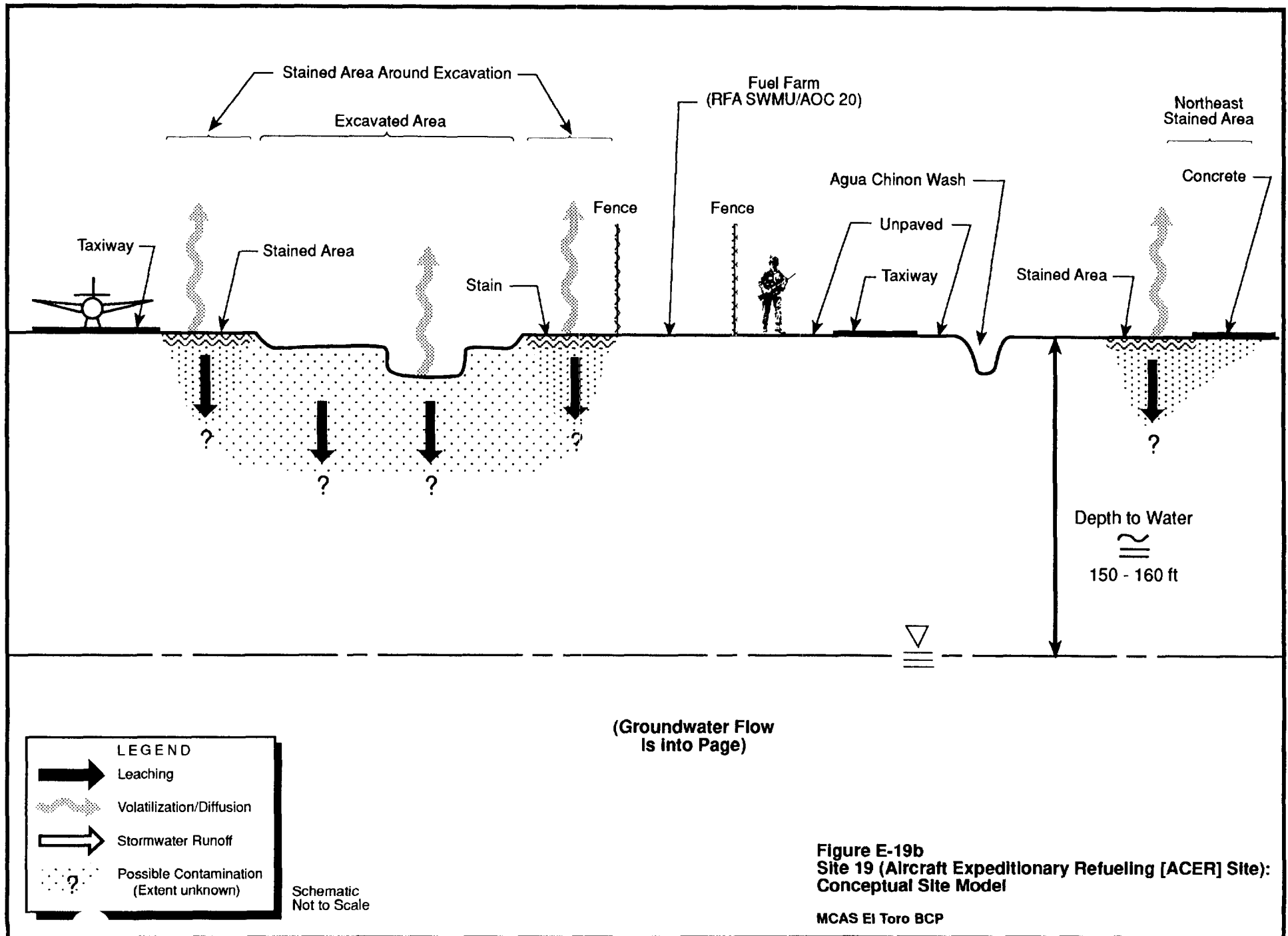


Figure E-17c
 Site 17 (Communication Station Landfill):
 Potential Exposure Routes and Pathways for Human and Ecological Receptors
 MCAS El Toro BCP





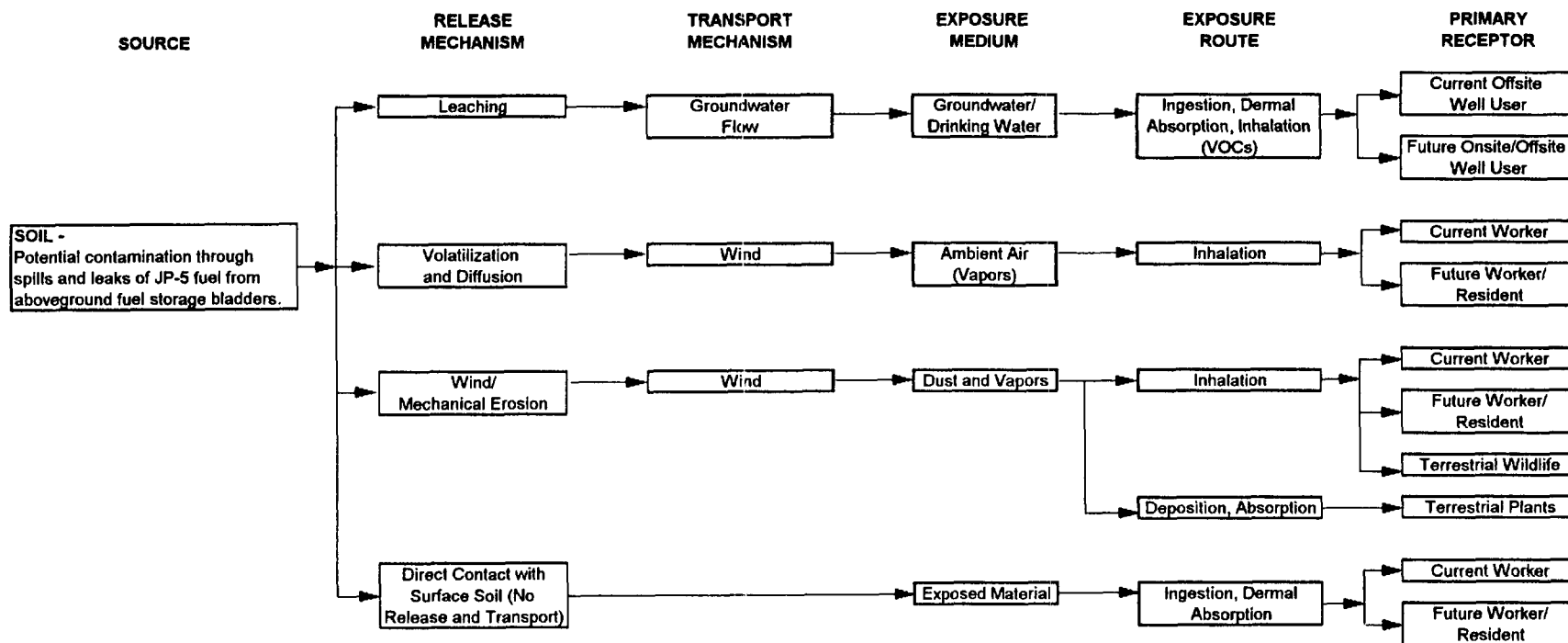


Figure E-19c
Site 19 (Aircraft Expeditionary Refueling (ACER) Site):
Potential Exposure Routes and Pathways for Human and Ecological Receptors
MCAS El Toro BCP

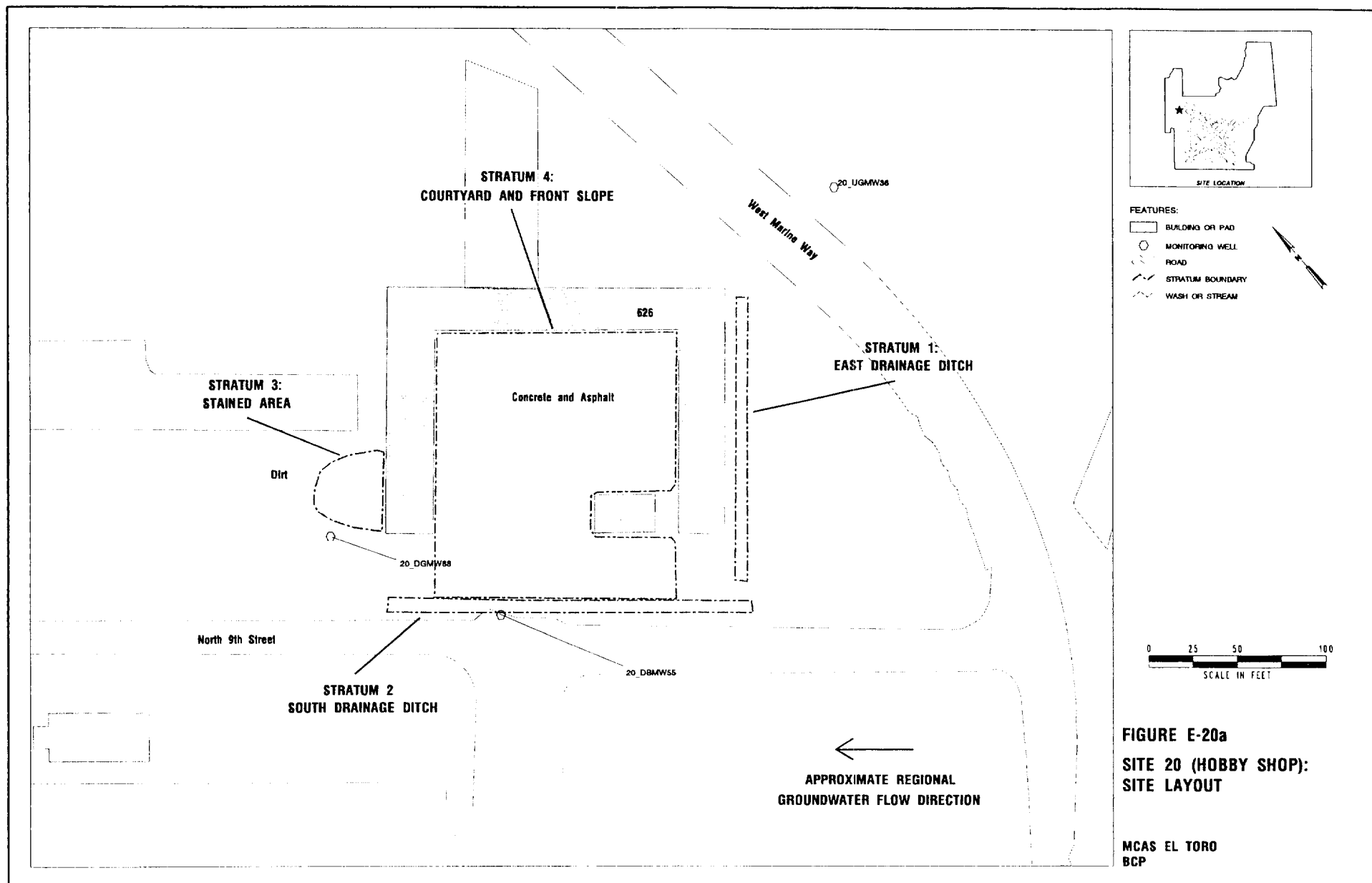


FIGURE E-20a
SITE 20 (HOBBY SHOP):
SITE LAYOUT

MCAS EL TORO
BCP

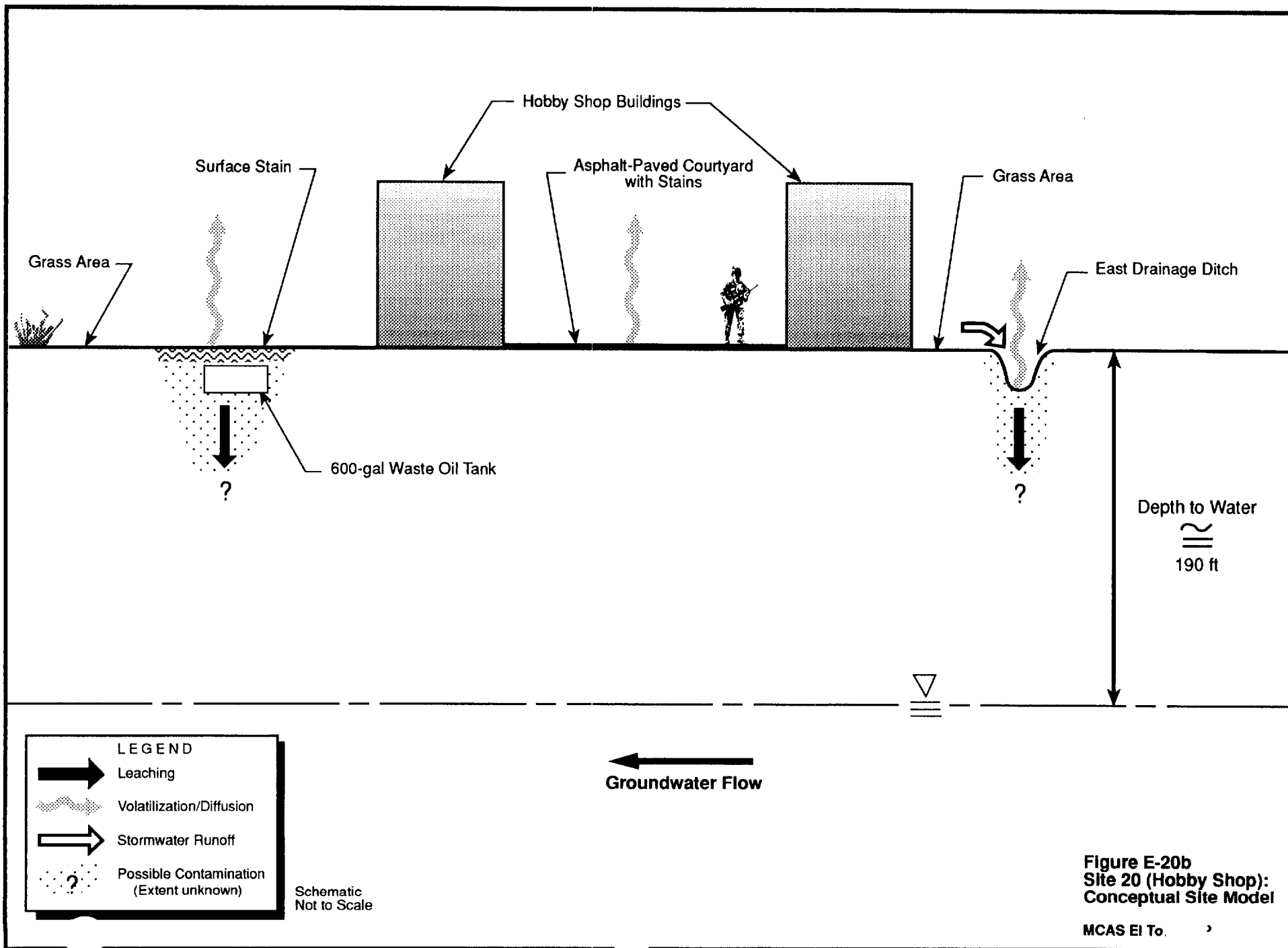


Figure E-20b
Site 20 (Hobby Shop):
Conceptual Site Model

MCAS El To.

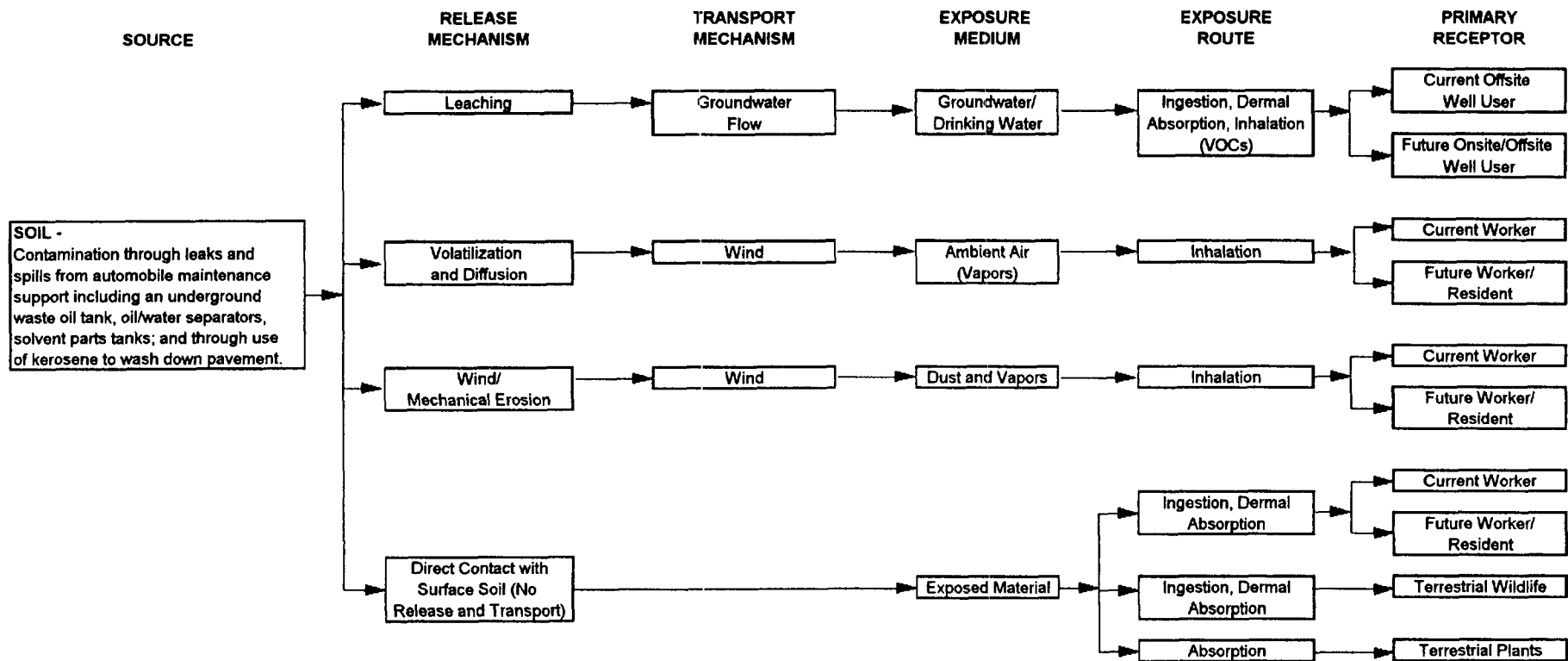
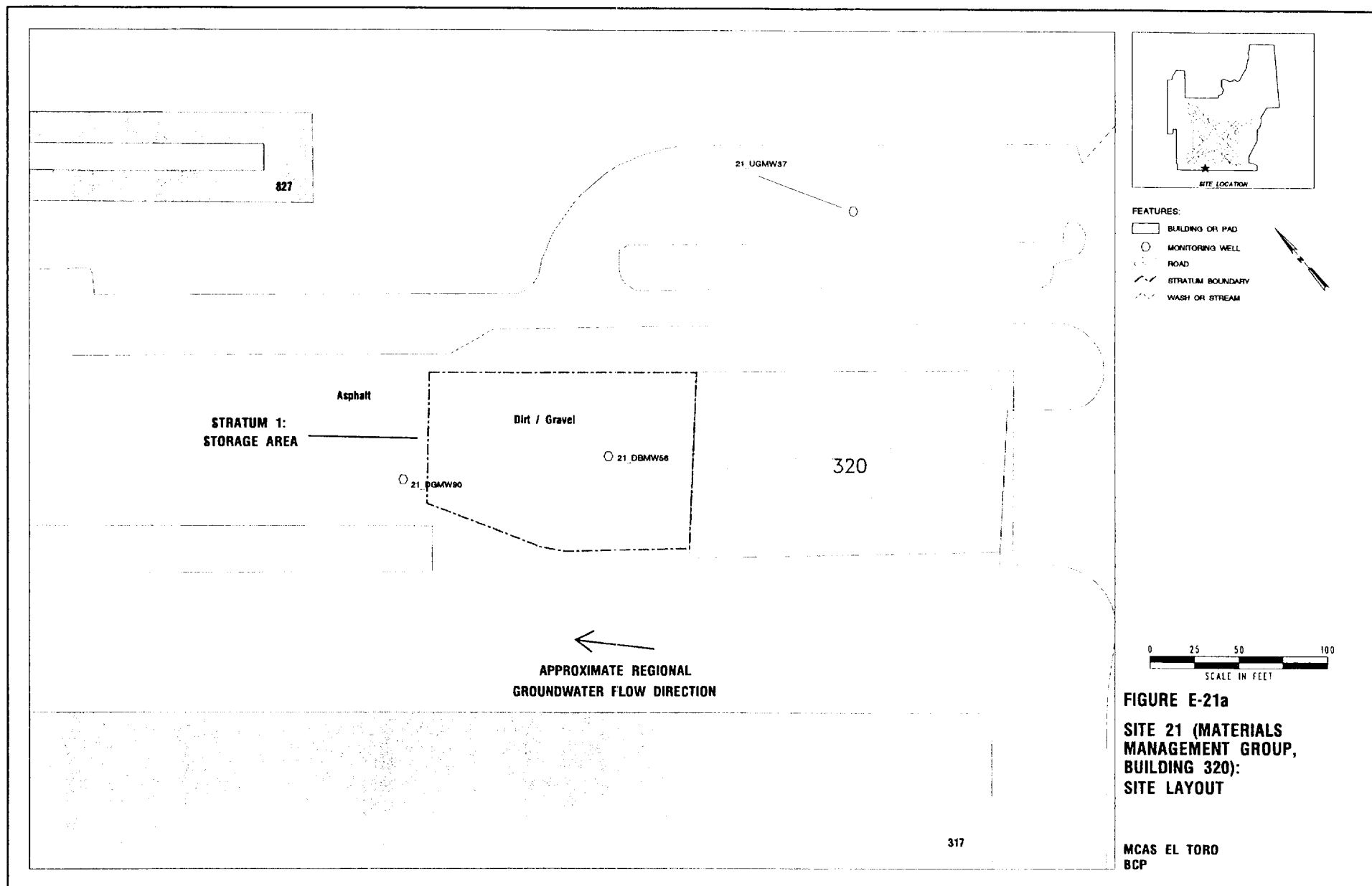


Figure E-20c
 Site 20 (Hobby Shop):
 Potential Exposure Routes and Pathways for Human and Ecological
 MCAS El Toro BCP



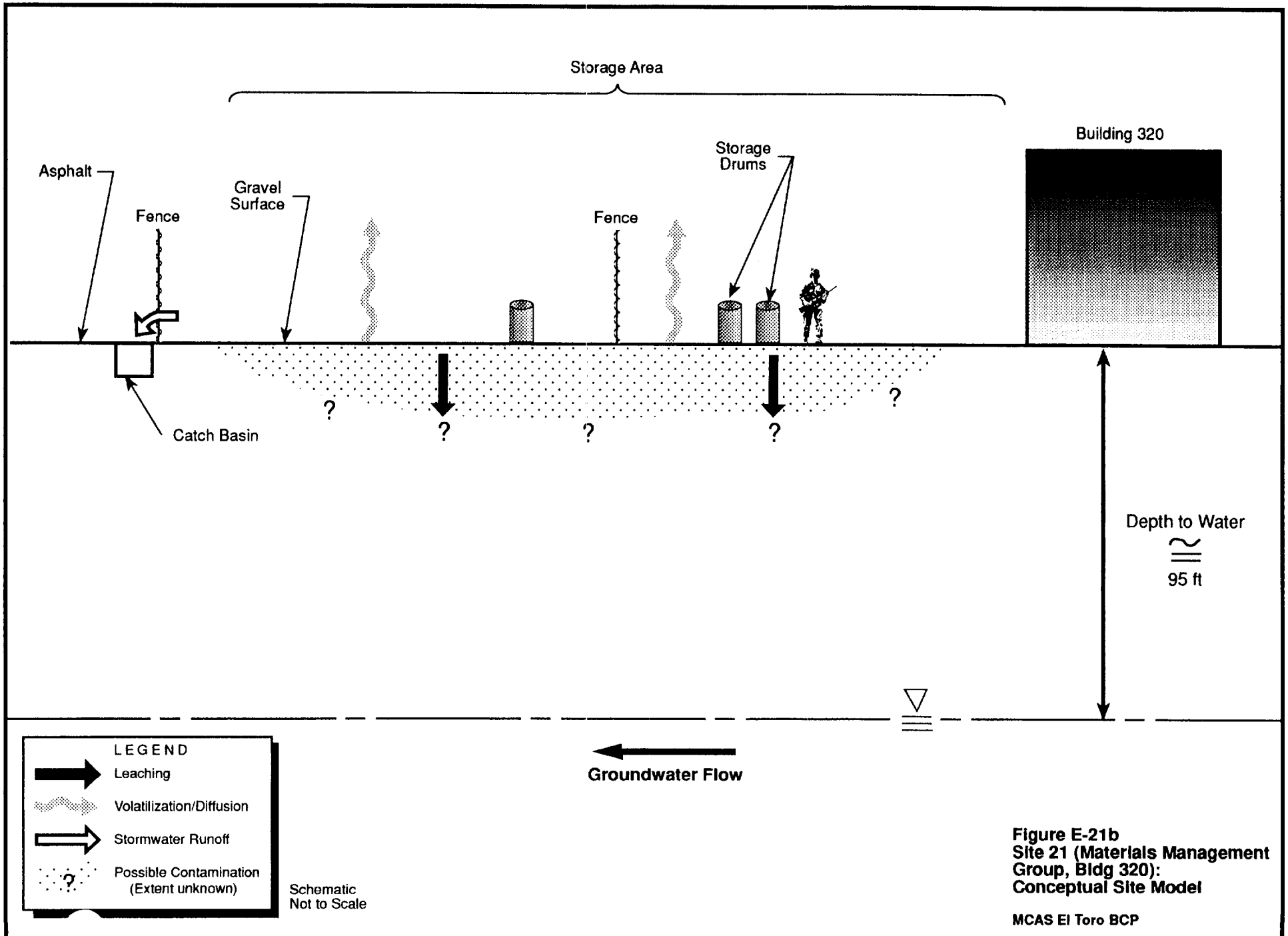


Figure E-21b
Site 21 (Materials Management
Group, Bldg 320):
Conceptual Site Model

MCAS El Toro BCP

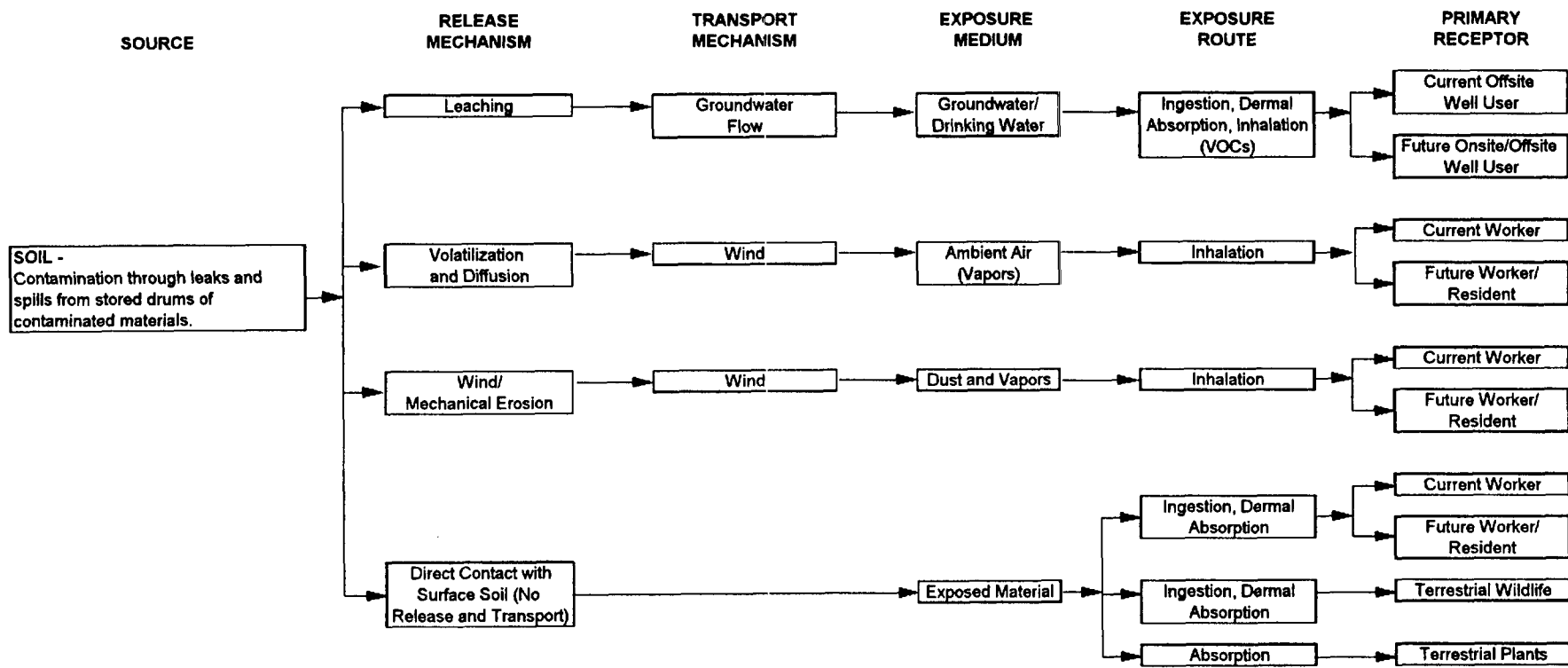
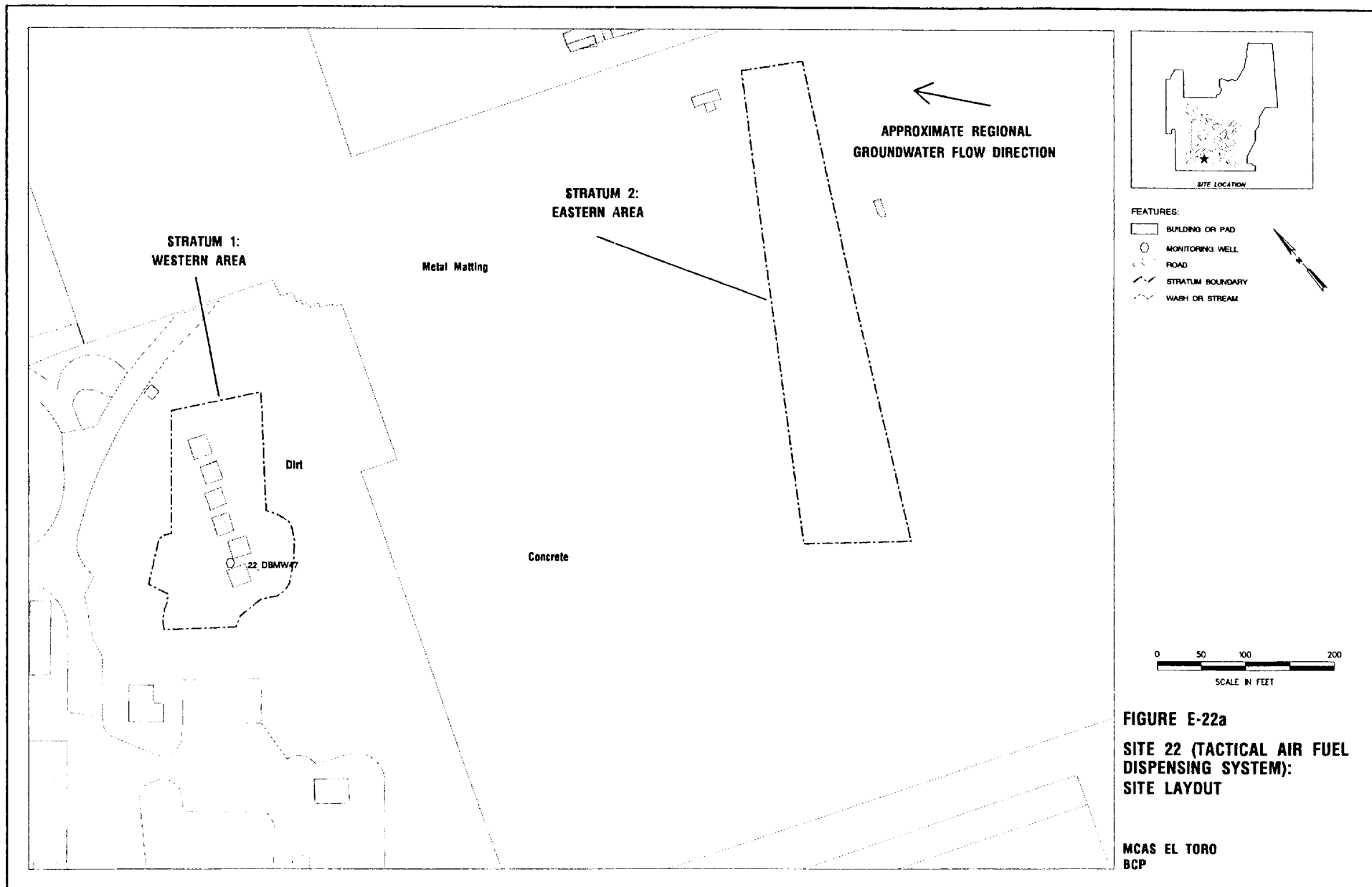
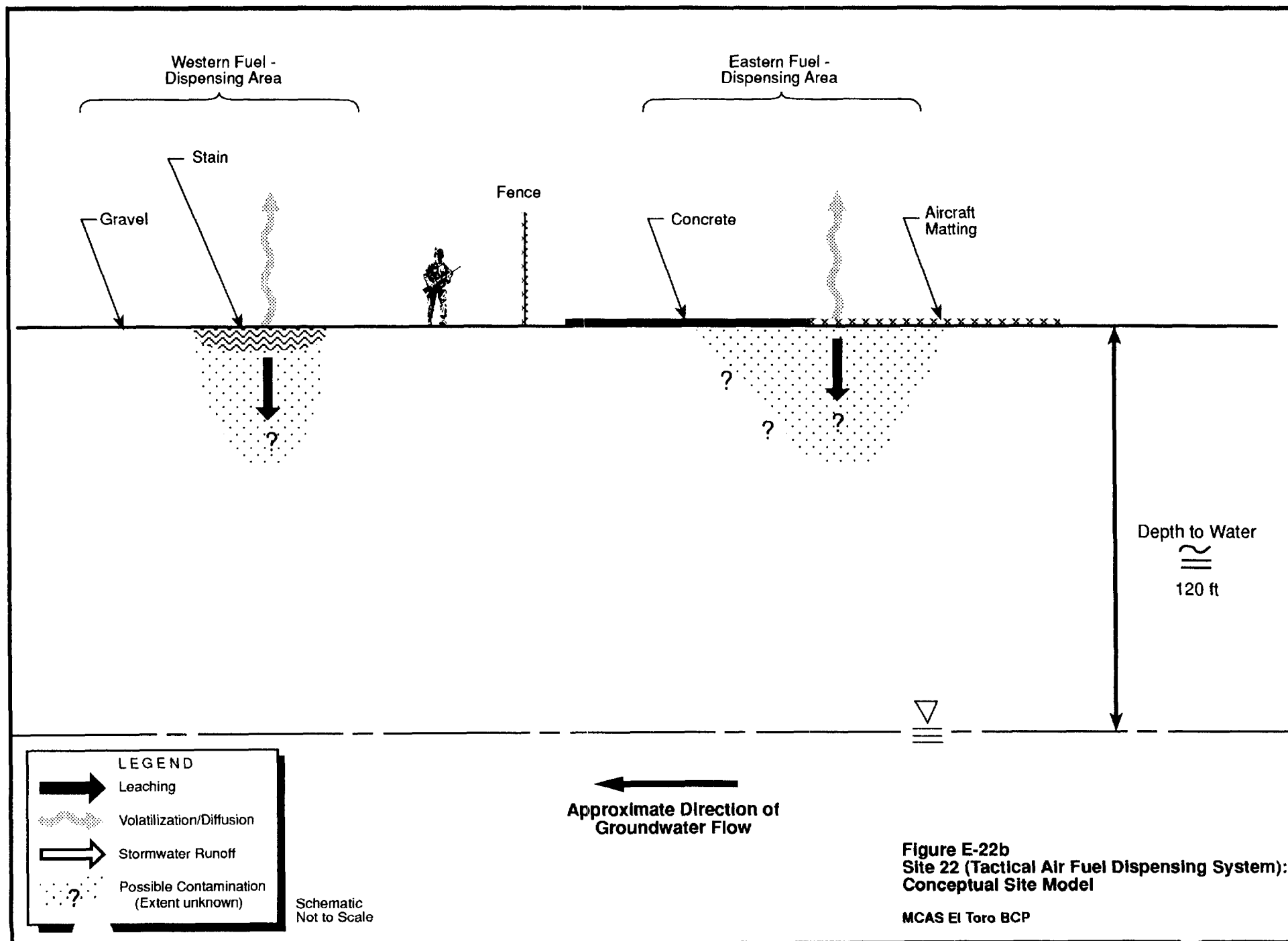


Figure E-21c
 Site 21 (Materials Management Group, Bldg. 320):
 Potential Exposure Routes and Pathways for Human and Ecological Receptors
 MCAS El Toro BCP





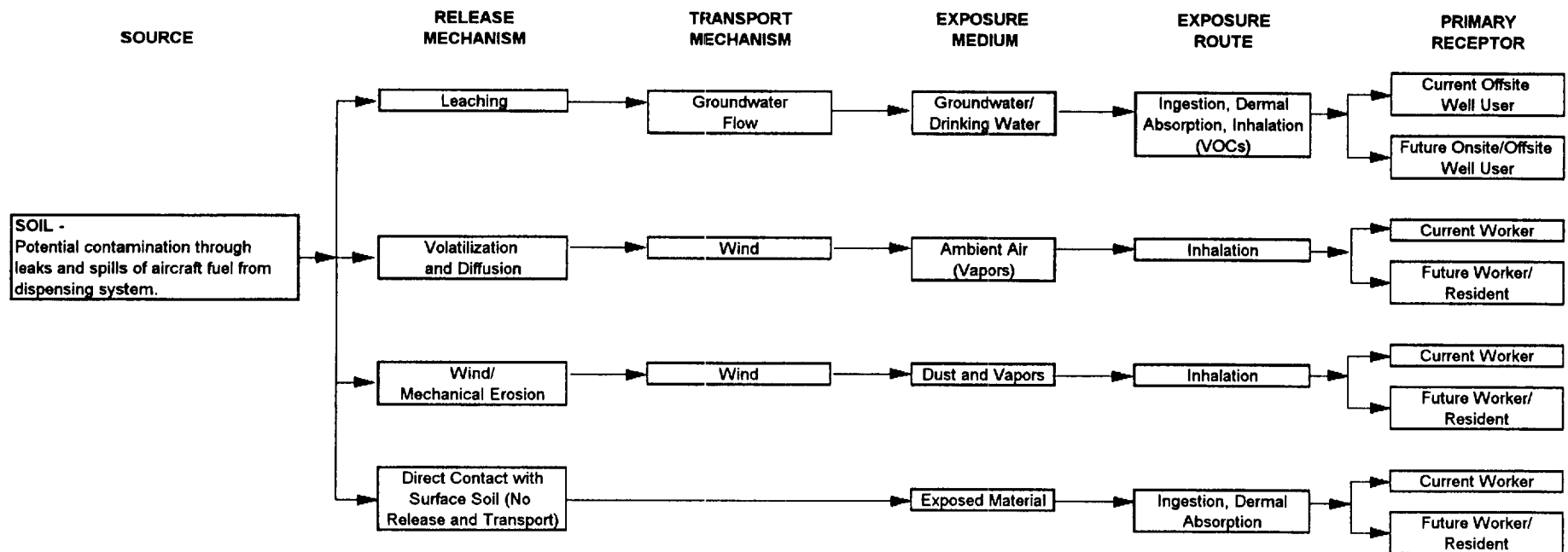


Figure E-22c
 Site 22 (Tactical Air Fuel Dispensing System):
 Potential Exposure Routes and Pathways for Human Receptors
 MCAS EI Toro BCP

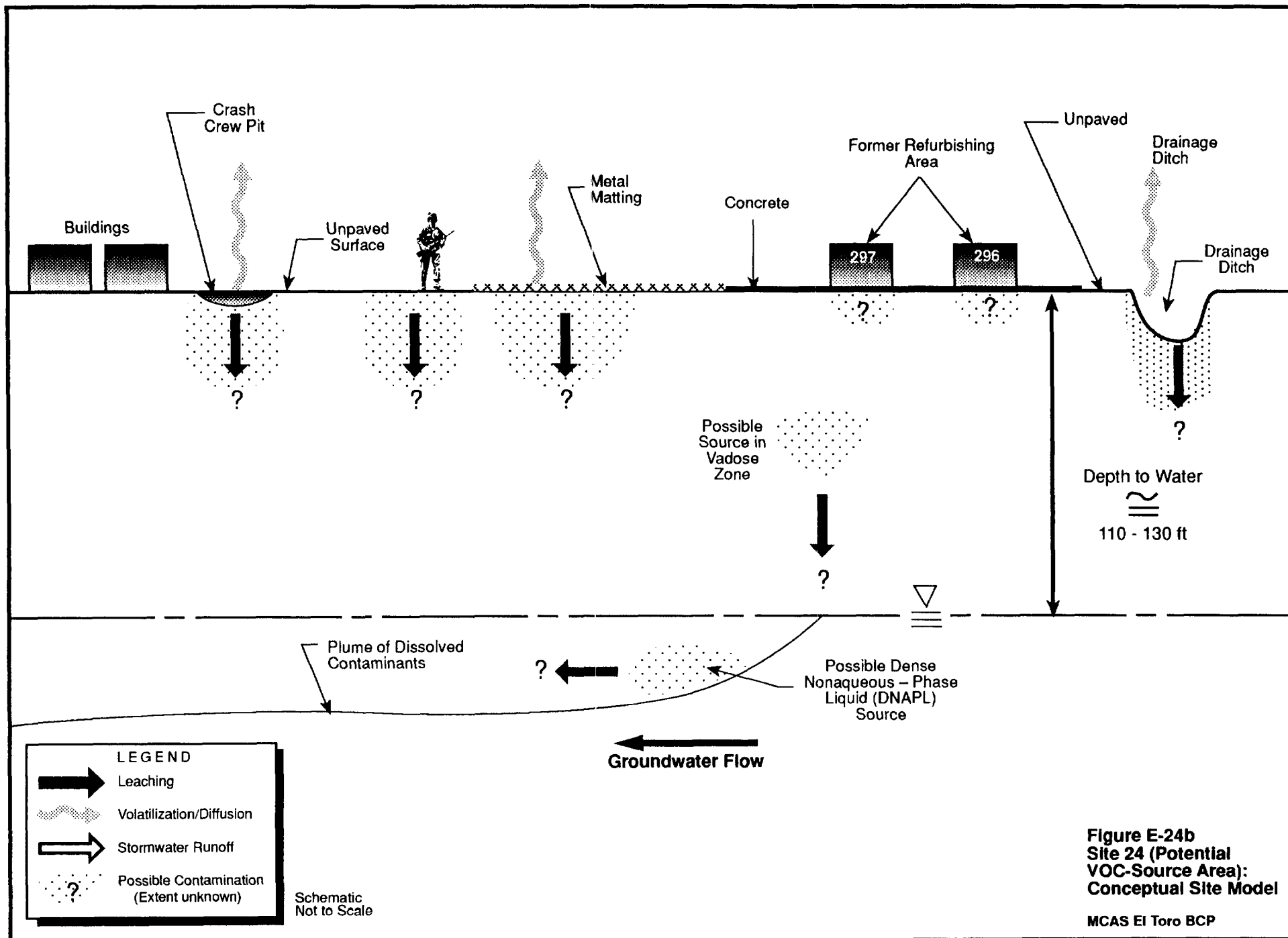


Figure E-24b
Site 24 (Potential
VOC-Source Area):
Conceptual Site Model

MCAS El Toro BCP

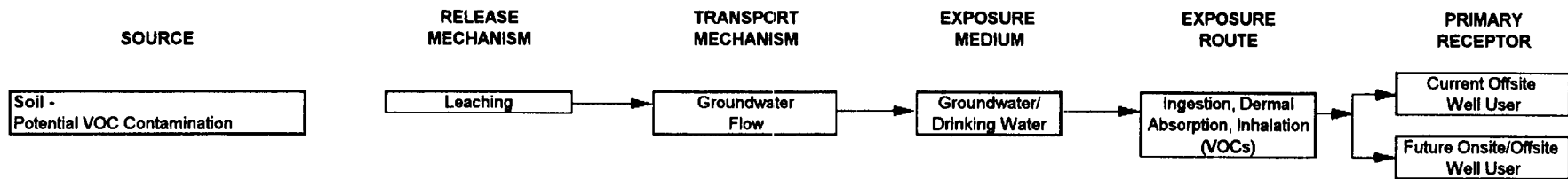
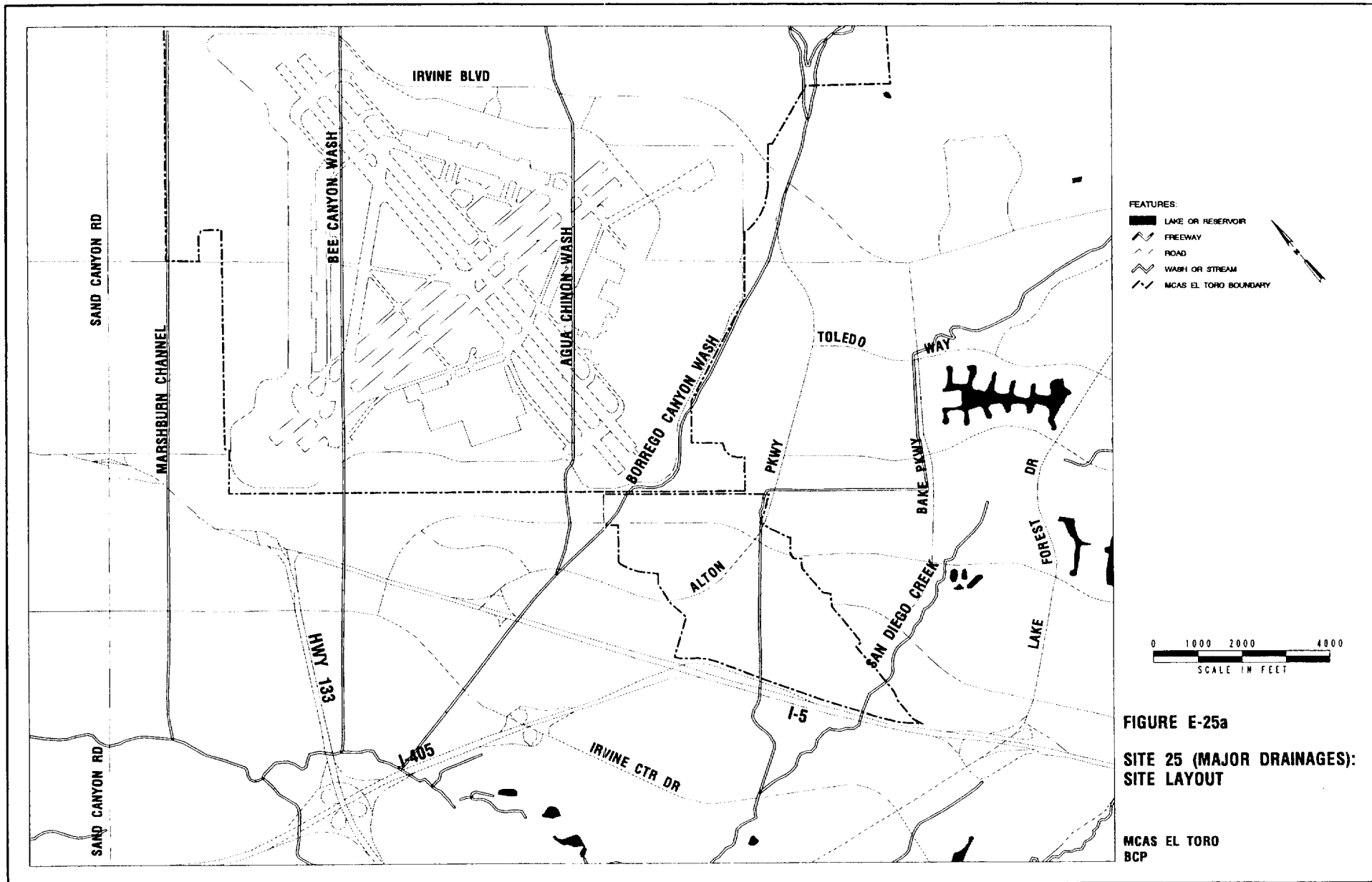


Figure E-24c

Site 21 (Materials Management Group, Bldg. 320):

**Potential Exposure Routes and Pathways for Human and Ecological Receptors
MCAS El Toro BCP**



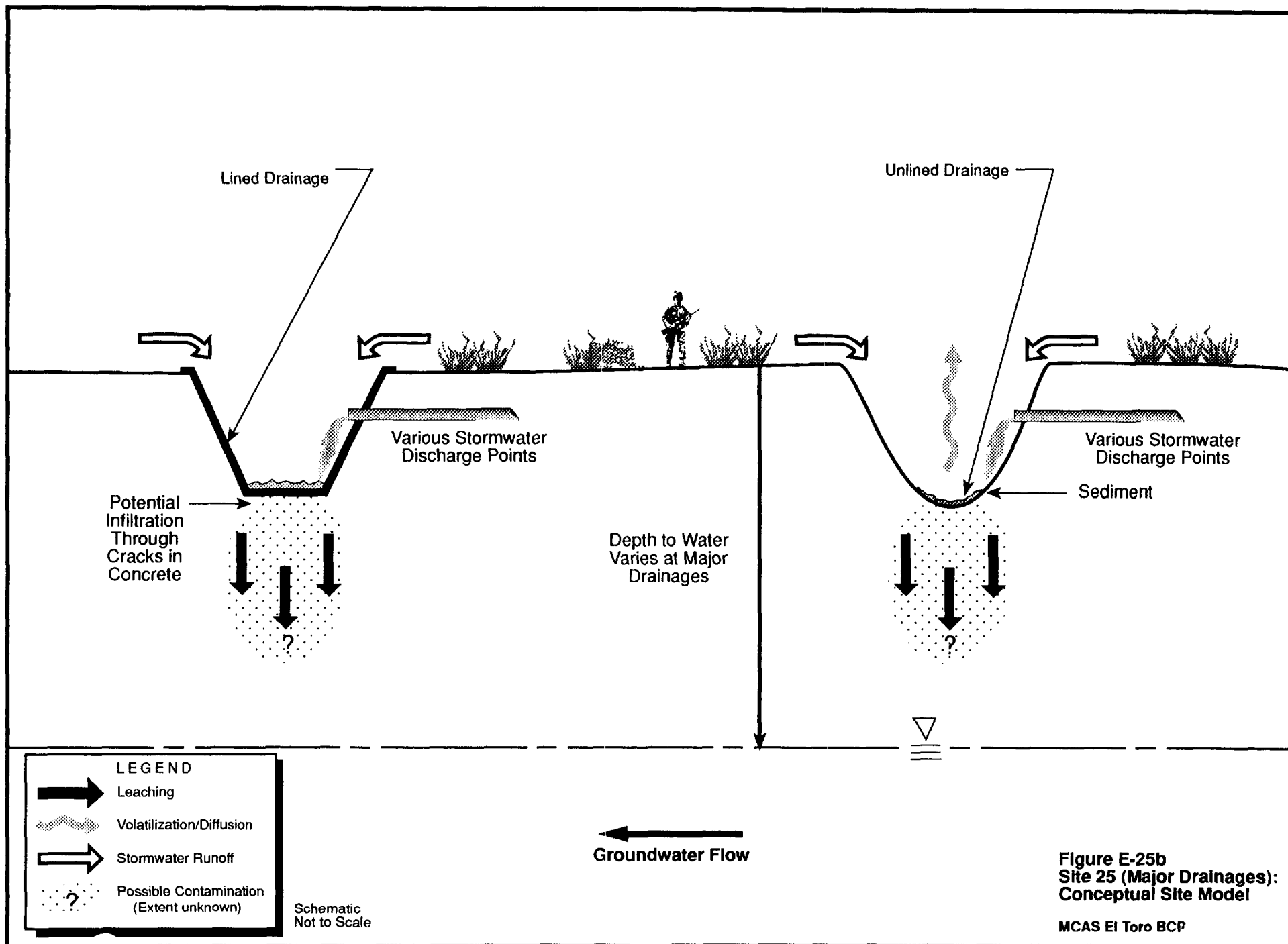


Figure E-25b
Site 25 (Major Drainages):
Conceptual Site Model

MCAS El Toro BCP

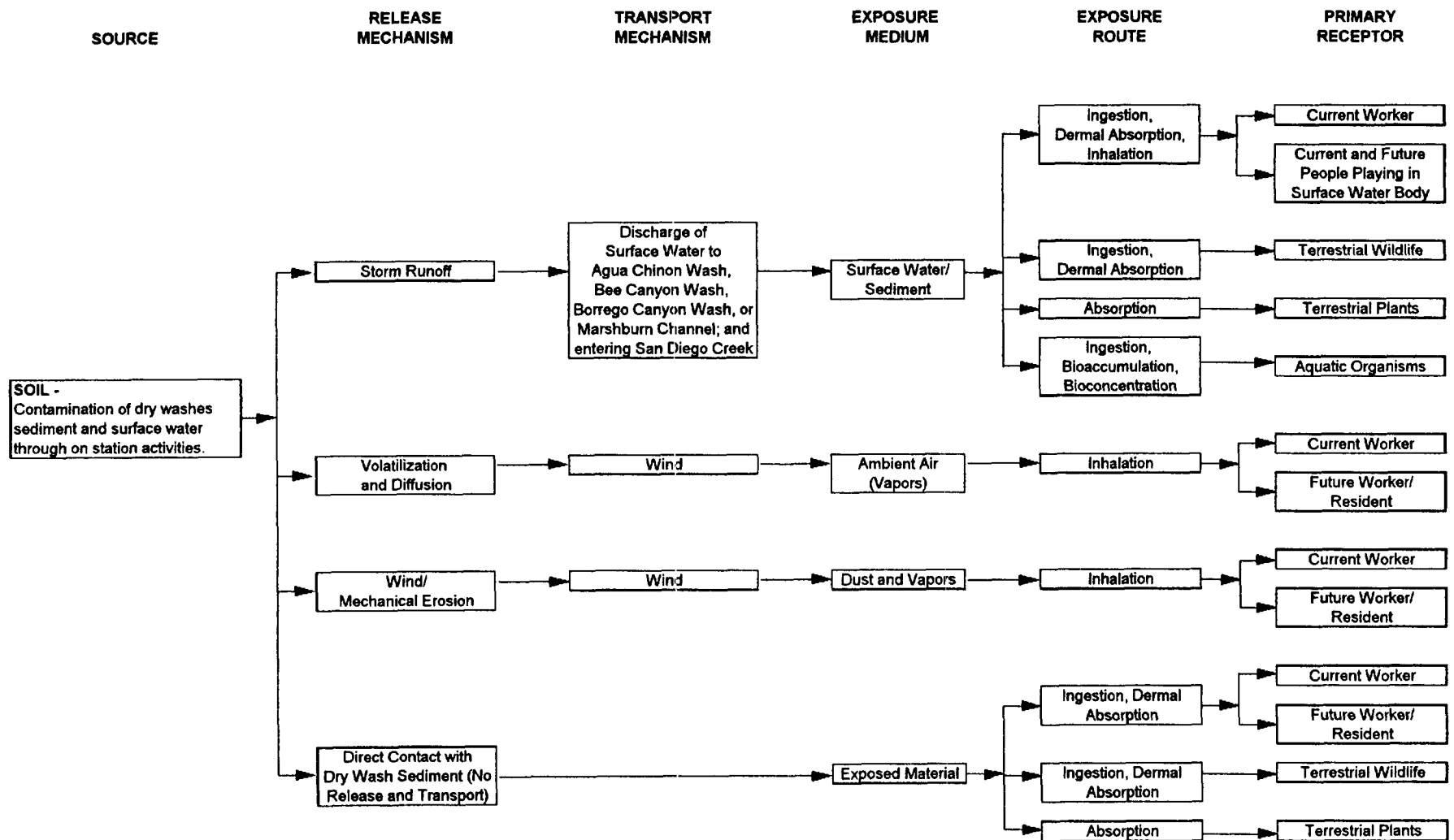


Figure E-25c
Site 25 (Major Drainage):
Potential Exposure Routes and Pathways for Human and Ecological
MCAS El Toro BCP

Table E-2a
Results of Background Statistical Analysis - Metals
MCAS El Toro BCP
March 1995

Parameter	Number Stations	Arith. Mean	Estimated Mean	CV	99th Percentile 50% Conf.	Units
Silver	11	.3	.3	.30	.55	MG/KG
Aluminum	11	7212.0	7307.1	.53	25396.26	MG/KG
Arsenic	11	1.9	2.3	2.18	37.61	MG/KG
Barium	11	69.6	70.4	.60	281.01	MG/KG
Beryllium	11	.3	.3	.55	1.20	MG/KG
Calcium	11	8651.6	6645.9	1.28	62164.12	MG/KG
Cadmium	11	1.6	1.5	2.09	23.11	MG/KG
Cobalt	11	3.2	3.6	1.19	31.02	MG/KG
Chromium	11	11.1	11.6	1.45	124.81	MG/KG
Copper	11	7.7	7.9	1.41	82.91	MG/KG
Iron	11	8404.3	8881.8	.88	54001.66	MG/KG
Mercury	11	.1	.1	1.01	.37	MG/KG
Potassium	11	2150.2	2258.5	.92	14399.89	MG/KG
Magnesium	11	3359.5	3377.4	.78	18014.29	MG/KG
Manganese	11	170.4	181.8	.89	1114.98	MG/KG
Sodium	11	228.3	228.8	.38	592.31	MG/KG
Nickel	11	13.1	13.0	2.00	193.61	MG/KG
Lead	11	6.0	6.3	.71	29.91	MG/KG
Antimony	11	1.4	1.4	.26	2.81	MG/KG
Selenium	11	.1	.1	.69	.48	MG/KG
Thallium	11	.2	.2	.53	.60	MG/KG
Vanadium	11	30.4	30.8	1.27	285.55	MG/KG
Zinc	11	31.9	32.3	.81	179.47	MG/KG

Table E-2b
Results of Background Statistical Analysis - Pesticides/Herbicides
MCAS El Toro BCP
March 1995

Page 1 of 2

Parameter	Number Stations	Arith. Mean	Estimated Mean	CV	99th % tile 50% Conf.	Units
Herbicides						
2, 4 Dichlorophenoxy Acetic Acid	21	58.4	58.4	.04	64.47	UG/KG
2, 4, 5-T	21	14.6	14.6	.04	16.13	UG/KG
2, 4-DB	21	29.9	29.9	.10	38.27	UG/KG
Dicamba	21	29.2	29.2	.04	32.25	UG/KG
MCPA	21	15986.3	15812.0	.25	28808.83	UG/KG
Dalapon	21	29.2	29.2	.04	32.25	UG/KG
Dinoseb	21	14.6	14.6	.04	16.13	UG/KG
MCPP	21	14601.2	14601.6	.04	16127.24	UG/KG
Dichloroprop	21	60.4	60.4	.12	81.44	UG/KG
2, 3, 5-TP (Silvex)	21	14.6	14.6	.04	16.13	UG/KG
Pesticides						
Aldrin	21	1.0	1.0	.04	1.09	UG/KG
BHC-Alpha	21	1.0	1.0	.04	1.09	UG/KG
BHC-Beta	21	1.0	1.0	.04	1.09	UG/KG
BHC-Delta	21	1.0	1.0	.04	1.09	UG/KG
BHC-Gamma (Lindane)	21	1.0	1.0	.04	1.09	UG/KG
Alpha-Chlordane	21	1.2	1.2	.40	2.94	UG/KG
Gamma-Chlordane	21	1.3	1.2	.42	3.19	UG/KG
4, 4' -DDD	21	5.5	4.5	1.12	29.37	UG/KG
4, 4' -DDE	21	20.1	12.5	2.84	177.29	UG/KG
4, 4' -DDT	21	23.7	16.3	3.20	248.37	UG/KG
Dieldrin	21	7.2	4.2	1.21	29.42	UG/KG
Endrin Aldehyde	21	2.9	2.5	.57	8.31	UG/KG
Endrin Ketone	21	1.9	1.9	.04	2.13	UG/KG
Endrin	21	2.3	2.2	.38	5.34	UG/KG
Endosulfan Sulfate	21	2.0	2.0	.15	2.95	UG/KG
Endosulfan I	21	1.0	1.0	.42	2.51	UG/KG
Endosulfan II	21	2.1	2.1	.27	3.96	UG/KG
Heptachlor Epoxide	21	1.0	1.0	.04	1.09	UG/KG
Heptachlor	21	1.0	1.0	.04	1.09	UG/KG

Table E-2b
Results of Background Statistical Analysis - Pesticides/Herbicides
MCAS El Toro BCP
March 1995

Page 2 of 2

Parameter	Number Stations	Arith. Mean	Estimated Mean	CV	99th % tile 50% Conf.	Units
Methoxychlor	21	10.4	10.4	.11	13.67	UG/KG
PCB-1016	21	19.4	19.4	.04	21.27	UG/KG
PCB-1221	21	39.4	39.4	.04	43.19	UG/KG
PCB-1232	21	19.4	19.4	.04	21.27	UG/KG
PCB-1242	21	19.4	19.4	.04	21.27	UG/KG
PCB-1248	21	19.4	19.4	.04	21.27	UG/KG
PCB-1254	21	19.4	19.4	.04	21.27	UG/KG
PCB-1260	21	19.4	19.4	.04	21.27	UG/KG
Toxaphene	21	99.9	99.9	.04	109.49	UG/KG